Turning On and Tuning In

Media Participation in the Arts

Charles M. Gray

Research Division Report #33

National Endowment for the Arts

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Seven Locks Press
Carson, California

Turning On and Tuning In: Public Participation in the Arts via Media in the United States is #33 in a series on matters of interest to the arts community commissioned by the Research Division of the National Endowment for the Arts.

Cover: Inside a mobile television truck during a *Live from Lincoln Center* performance, "Luciano Pavarotti in Concert," transmitted nationally via the Public Broadcasting Service (PBS). Photo by Susanne Faulkner Stevens.

First printed 1995

Library of Congress Cataloging-in-Publication Data
Gray, Charles M. (Charles Melvin), 1944–
Turning on and tuning in : public participation in the arts via media in the United States / Charles M. Gray.
p. cm. — (Research Division report : 33)
Includes bibliographical references.
ISBN 0-929765-39-7 (paperback)
1. Arts audiences—United States. 2. Arts surveys—United States. I. Title. II. Series: Research Division report (National Endowment for the Arts. Research Division) ; 33.
NX220.G73 1995
700'.1'030973—dc20 95-34806
CIP

Manufactured in the United States of America

Seven Locks Press
Carson, California
1-800-354-5348

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Preface

Much of the data analysis and writing of this monograph was conducted while I was a visiting professor in the Department of Political Science—the organizational home of the Administration of Justice and Master of Public Administration programs—at the University of North Carolina–Chapel Hill. I am deeply indebted to a number of departmental colleagues and university staff members who overlooked the fact that I am an economist and helped create a welcoming atmosphere. Chairman David Lowery and Professor George Rabinowicz were especially supportive. Candy Terrell, department administrator, simply made things happen. Sue Dodd and Josie Marsh of the Institute for Research in the Social Sciences were instrumental in arranging to have the data tape uploaded and cataloged; and Jim Cassell provided answers to technical questions. One of my co-researchers, Jeffrey Love of the National Assembly of State Arts Agencies, provided reassurances regarding data, analytical techniques, and results. Tom Bradshaw of the National Endowment for the Arts (NEA) was supportive throughout this process, as my ideas evolved and as Murphy's Law brought down disks both hard and floppy, disabled entire computing systems, uncovered previously unknown software glitches, and otherwise impeded progress.

This research was completed under contract for the National Endowment for the Arts. Ideas and opinions expressed are those of the author and do not reflect an official position of the NEA or any other public or private agency. Any errors or omissions are solely the responsibility of the author.

Executive Summary

This monograph examines and interprets survey data pertaining to public participation in the arts via television, radio, and sound recordings. The data derive from 1982 and 1992 surveys of leisure activities and public participation in the arts conducted by the U.S. Bureau of the Census and funded by the National Endowment for the Arts (NEA). The seven "core" or "benchmark" arts, listed in their order on the survey instruments, are jazz, classical music, opera, musicals and operettas, plays, dance, and the visual arts.

Participation via media is especially important for at least two reasons: media may provide arts access to those who are otherwise unable to participate through live attendance—because of location, income, or other factors; and the media may be influential in cultivating a taste for the arts, which could lead to higher overall participation.

While the primary focus of this monograph is participation by media, appropriate comparisons dictate that the analyses be extended to participation in live performances and live attendance as well. Many of the hypothesis tests necessarily include such live alternatives.

Although we can speak meaningfully of "arts markets," the arts are widely regarded as entailing *market failures,* one of which is especially important for the purposes of this research.[1] The so-called exclusion principle, by which those who do not purchase a good or service are denied use, fails in the case of the broadcast media. Anyone with a receiver can listen to or view all programming, including arts programming. This is an important factor in providing arts access to lower income groups, and it informs the hypotheses developed below.

Public participation in the arts, like consumption of any other good or service, is influenced by willingness and ability to pay. Willingness to pay encompasses consumer tastes and preferences, which are themselves very likely linked to identifiable demographic characteristics. Ability to pay is influenced largely by household income and purchase price.

Simple bivariate techniques are used to test—and confirm—the hypotheses put forth in this monograph, but the conclusions rely primarily on logistic regression, a multivariate statistical technique that is especially well suited for this kind of data. (Logistic regression is further explained in Part III, as well as Appendix B.) The hypotheses tested in this monograph, and the results obtained, are as follows:

- **Arts participation increases with age.** The taste for art is an acquired or cultivated taste, and both acquisition and cultivation are time-dependent processes. It is said that one must learn how to enjoy the arts. Potentially offsetting this influence for older persons is their reduced mobility in attending live performances and the special challenge of adapting to new technology, which would influence media participation. The results for the most part support the hypothesis. The major exception is jazz participation, which seems to be a young persons' art form. For other art forms and media, participation rates rise at least through the middle-age group and sometimes decline for the oldest group.
- **An aging population will increase arts participation.** This is really a corollary of the first hypothesis. It would follow that if participation rises with age, then an overall older population, other things being equal, would participate in the arts at a higher rate. Unfortunately, other things have not been equal. Specifically, participation rates among young adults and "30-somethings" fell over the decade for many of the art forms and media categories, partially or totally offsetting the impact of an aging population. This suggests another matter deserving consideration: If arts audiences are aging and no efforts are made to increase participation among younger groups, the audiences will not be replenished.
- **Arts participation increases with education.** Students are exposed to the arts at every level of education, with the possible exception of postgraduate studies. From primary school rhythm bands through college art appreciation classes, students have the opportunity to gain increasingly sophisticated participation skills. With negligible exceptions, the results bear out the hypothesis. Participation rates for the college educated often are double those of less educated groups. The downside is that participation rates for the more highly educated segments have declined over time.
- **Arts participation rises with income.** At the very least, those in higher income categories are better able to afford arts participation. A relatively large segment of the population may regard the prices of symphony tickets and compact discs, for example, as high compared with their incomes. The statistical results are consistent with the hypothesis.
- **Income plays a reduced role in participation via the broadcast media as compared with participation via live and recorded performances.** The broadcast media entail no explicit user charge beyond possession of a receiving unit; subsequent participation requires no additional ability to pay. Live participation typically involves an admission fee, and listening to a recording follows a purchase by the listener or someone else. The tabular presentations and statistical results are consistent with this hypothesis.
- **Urban residents are more likely to participate in the arts than are rural**

residents. Most live participation opportunities are located in urban areas. It is likely that the availability of live arts creates a taste that can also be served through participation via media. The results bear out this expectation for each art form and for every medium, as well as for live performances. The ratios of urban-to-rural participation rates are declining, however, especially for the broadcast media, indicating that urban location was not so important a relative determinant of participation in 1992 as in 1982. This is further supported by the logistic regressions, where the urban coefficients in the broadcast equations declined from 1982 to 1992.

- **Urban residence is not so important a determinant of participation via the broadcast media and recordings as it is for participation via live attendance.** While this outcome is not so clear in the simple tabular displays, the logistic regression coefficients linking urban residence to arts participation are consistently higher for live attendance in both survey periods.
- **Men are less likely to participate in the arts than are women.** This hypothesis is premised on greater early exposure to the arts through lessons and other opportunities for personal involvement for girls as compared to boys.[2] To the extent that this is the case, and to the extent that such exposure is instrumental in forming tastes and preferences, men are less likely to have developed such taste. The results confirm this hypothesis for all art forms except jazz.
- **Whites are more likely to participate in the arts than are other racial groups.** This hypothesis arises from the understanding that much of the art and culture of the United States has European roots that may not be immediately accessible to minority cultures. Accordingly, one would expect nonwhite participation to be lower. The results are generally consistent with this hypothesis, the exceptions being greater black participation in jazz and occasionally greater participation by respondents of Asian heritage.

Conclusions

The data generally support every hypothesis. Among the policy implications supported by the findings are the following:

- **Some television channels can be dedicated to arts programming.** This is similar to radio stations adopting a format, which means that, for example, televised opera—live or prerecorded—could be available to viewers 24 hours a day. The advent of cable access to literally hundreds of channels can facilitate the development of dedicated programming. This supply factor may well be an important explanation for the higher radio participation in

jazz and classical music, compared with television participation in those art forms.

- **Arts organizations may explore greater use of videotapes—music videos for the cultured.** Just as many symphony orchestras have found CDs to be a source of revenue and exposure, the development of integrated audio-video stereophonic systems may offer opportunities for videotape marketing.
- **Educators can further enhance exposure to the arts at all levels.** Arts education may have been at least a partial victim of the educational fads of the last several years, including elimination of required college courses in the 1970s. The threatened diminution of our society's cultural core may justify restoration and expansion of such courses. Many arts organizations already collaborate with local school systems to offer arts exposure, and this process could be expanded. The arts could also be directly involved in the adoption of new learning technology, including distance learning via television, computer linkages, and CD-ROMS.

Overview, Background, and Hypotheses

PART I

Historically, people who wanted to experience the performing or visual arts were largely dependent upon geographic proximity. It was necessary to attend the theater or the opera or to visit an art museum or gallery. Such participation was therefore limited to those who resided in or visited urban areas, or who benefited from a visit by a touring company. Since most of the population before the 20th century was rural, the opportunities for such artistic experiences were severely limited. The advent of recorded and broadcast media, however, altered the accessibility of artistic participation, although the form of participation was altered as well. One could, of course, argue that a televised concert, dramatic performance, or other arts presentation is a fundamentally different experience from live attendance. While no one would seriously contend that a two-dimensional, small-screen viewing of the American Ballet Theater is identical to live attendance, some may regard the televised version as a viable alternative. This is especially true for those who enjoy dance but who have no easy access to performing venues.

This monograph examines and interprets survey data related to participation in the arts via the media. The data derive from 1982 and 1992 surveys of leisure activities and public participation in the arts, conducted by the U.S. Bureau of the Census and funded by the National Endowment for the Arts.[3] Respondents were queried about their participation in seven "core," or "benchmark," arts activities via electronic media, including both broadcast and recorded media. The broadcast media are radio and television, and their recorded counterparts include compact discs (CDs), cassette tapes, vinyl recordings, and videotapes. (See Appendix A for the 1992 Survey of Public Participation in the Arts.)

This monograph gives special attention to the factors that distinguish those survey respondents who participate only through the media and those for whom the media constitute a complementary means of participation. And although the survey questions changed from 1982 to 1992 (for example, "dance" replaced the narrower category of "ballet") and technology has evolved (neither VCRs nor CDs were widely used in the earlier period), the monograph also discusses changes in participation over time.

The emphasis here is upon each medium as a *means* of transmitting art rather than as an art form in itself. Under certain circumstances, of course, the media can become "plastic art": television screens and radio broadcasts have been used,

for example, in dance performances and music concerts. But here the references are quite specific: jazz, classical music, opera, musical plays and operettas (musicals hereafter), theater (plays), dance and ballet (dance, usually), and museums and the visual arts (art), as conveyed by media.

As a means of transmitting art, the broadcast media are perhaps especially influential in *cultivating* the taste for art as well.[4] Although the evidence to date is inconclusive, the media may play a significant role in creating arts markets. The challenge facing the media in this latter regard is apparent from the fact that neither broadcast nor cable television offers significant arts programming, having yielded most such offerings to the Public Broadcasting System (PBS).[5]

Media Arts as Economic Goods

In most markets, the forces of supply and demand interact to bring about a reasonably efficient allocation of goods and services. Demand reflects the willingness and ability of consumers to purchase the good in question. The willingness to purchase reflects tastes and preferences, which are indicated to a large extent by such demographic characteristics as education, age, gender, race, and other taste-determining variables. Ability to purchase is typically indicated by household income. Likewise, supply reflects the willingness and ability of a seller to make the good available and is largely determined by the costs of production. Since the focus here is on the arts participant, those elements that influence demand will bear closest scrutiny.

Matters are complicated somewhat by the fact that all of the media considered in this monograph entail one or another type of market failure, which means that the forces of supply and demand encounter some sort of interference. One of the primary examples in the arts generally is the existence of *collective benefits,* whereby society as a whole gains some benefits in excess of those accruing to the actual purchaser of a good or service. For example, a person who purchases and wears a pair of shoes enjoys the benefits of doing so; few if any benefits accrue to other individuals. But if enough individuals purchase season tickets to the opera, the local community may be enriched in ways that exceed the benefits to ticket purchasers.[6]

Other types of market failure are of more immediate interest, however. The person who refuses to pay the price for a pair of shoes will not ordinarily be able to acquire the shoes. He or she is *excluded* from acquiring and subsequently enjoying the goods in question. This exclusion principle applies not only in the shoes example, but to any other purely private goods as well. The broadcast media are, however, very different. Once an individual or a household has purchased a receiving unit, any subsequent broadcasts can be received at no

additional charge. Short of employing some sort of scrambling and unscrambling devices, the broadcaster is unable to exclude anyone from receiving the broadcasts. This suggests that household income, as a measure of ability to pay, may not be so important in determining who participates in the arts via broadcast media. The same is true of cable television, albeit perhaps to a lesser extent. Most channels are available in a variety of packages for a corresponding variety of monthly fees. Except for "pay-per-view" programming, all programs in the selected channel package are available at no additional user charge. Again, income may not be an important determinant of participation.

Live performances and recordings have elements of both private goods and public goods. In the case of live performances, those who refuse to purchase a ticket can be excluded, assuming the performance venue has the means of physical exclusion. On the other hand, such performances entail nonrival consumption, at least up to the capacity of the performing space. Not only does one person's participation not detract from that of another, their mutual attendance may, in fact, enhance each other's experience; for example, the sound in most concert halls improves when seats are filled.

Although listening to a recording entails nonrival consumption (numerous individuals can, after all, simultaneously listen to a CD on a stereo system), the actual purchase of the CD adheres to the exclusion principle. If someone purchases a specific CD, no one else can purchase that one, although, of course, precise replicas are likely available at the same price. Nevertheless it is the existence of a price that is the key, and both a live performance admission fee and a CD price mean that ability to pay—income—may be a more significant determinant of participation than in the broadcast media.

"Supply" Factors

Market sales data typically portray a market outcome influenced by both supply and demand forces. This would certainly be the case for CDs or videotapes. This is not so obviously the case for the broadcast media, where supply and demand do not interact in the usual fashion.[7] Nonetheless, the data discussed below indicate the general availability of selected media alternatives.

Television

Portraying one measure of the supply of televised arts, Table 1 indicates the distribution of cultural programming on public television from 1974 through 1992. Although the term *cultural* is not defined precisely, it very likely extends beyond the benchmark arts discussed here to embrace literature, motion

TABLE 1. Public Television Programming (Percentages of Broadcast Hours)

Program Content	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992
General										
News and public affairs[a]	12.6	11.9	11.0	12.2	12.4	14.1	16.4	16.3	17.6	17.4
Information and skills	15.9	19.9	23.6	22.8	24.5	25.5	29.5	31.7	31.5	28.7
Cultural	17.9	20.9	22.1	21.9	22.6	20.1	20.5	17.9	19.1	17.5
General children and youth[b]	10.7	10.0	8.7	8.9	7.5	7.9	6.5	5.8	6.0	14.6
"Sesame Street"	21.2	17.8	16.1	15.5	14.8	14.8	11.4	11.7	11.2	11.0
Other general	4.4	3.8	5.3	5.5	4.8	5.5	1.6	1.2	0.9	0.9
Instructional[c]										
Children and youth	15.2	15.2	13.7	13.7	12.9	12.4	—	—	—	8.7
Adult	1.9	1.4	1.2	1.0	1.4	0.6	—	—	—	2.9

Note: Figures do not add up to 100 due to rounding. 1974 and 1976 are calendar years; 1978 to 1990 are fiscal years; 1988 through 1992 surveys used October through September seasons. From 1988 through 1992, only broadcasters in the 50 U.S. states were surveyed.

a. From 1986 through 1992, the News and Public Affairs category included "Business or Consumer."
b. Not including "Sesame Street," which is reported separately.
c. After 1974, some general audience programs with instructional applications were double counted if aired during school hours when school was in session.

Source: Unpublished data provided by Janice Jones, media research analyst, Corporation for Public Broadcasting

pictures, and popular culture. The rise that took place in the early 1980s in the percentage of broadcast hours devoted to cultural programming had diminished by the early 1990s. The 1992 percentage of 17.5, in fact, was the lowest of all the years covered. To be sure, some of the children and youth programming may include cultural aspects, and that may be a particularly propitious inclusion, to the extent that media exposure helps shape tastes. But it is clear, based on the data in Table 1, that cultural programming directed specifically to adults, that is, arts via television, has been waning.

Radio

Similarly, Table 2 offers some information on the availability of the benchmark arts via radio. Lacking the visual aspect of television, radio, of course, presents only the audible arts: jazz, classical music, opera, and musicals. Clearly, far more stations offer rock, country, and other musical formats than either classical or jazz.

TABLE 2. Number of U.S. Radio Stations Offering Various Formats, 1992

Format	Total Stations
Adult contemporary	2,288
Beautiful music	271
Top-40	767
Country	2,651
MOR	528
News	596
Oldies	1,031
Religious	1,144
Rock	584
Talk	388
Classical	442
Jazz	367

Note: Table data cover only those stations providing format information.
Source: *Broadcasting and Cable Yearbook, 1993*

Recordings

Table 3 displays trends in unit shipments of recorded music from 1983 to 1993. The change in technology over that period is apparent in the appearance and rapid expansion of compact discs (CDs) and music videos and the near demise of the long-playing vinyl albums (LP/EP) and singles. Unit shipments of CDs grew at an average annual rate of 90.2 percent, while CD singles, introduced somewhat later, expanded at a 34.3 percent annual pace.

Shipments of cassettes peaked in 1988 and declined thereafter, for an average growth rate over the entire period of only 3.7 percent. The declines in shipments of long-playing and single vinyl record-

TABLE 3. Manufacturers' Shipments of Recorded Music (Millions of Units)

Item	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
CD	0.8	5.8	22.8	53.0	102.1	149.7	207.2	286.5	333.3	407.5	495.4
CD single	NA	NA	NA	NA	NA	1.6	–0.1	1.1	5.7	7.3	7.0
Cassette	236.8	332.0	339.1	344.5	410.0	450.1	446.2	442.2	360.1	366.4	339.5
LP/EP	209.6	204.8	167.0	125.2	107.0	72.4	34.6	11.7	4.8	2.3	1.2
Single	124.6	131.5	120.7	93.9	82.0	65.6	36.6	27.6	22.0	19.8	15.1
Music video	NA	NA	NA	NA	NA	NA	6.1	9.2	8.1	7.6	11.0

Note: Figures refer to net number of units after returns.
Source: Recording Industry Association of America

ings were at average annual rates of –40.3 and –19.0 percent, respectively. Compared with CDs, music video shipments grew at a relatively modest average annual pace of 15.9 percent.

The relative importance of two of the benchmark arts on recordings is indicated by the percentage of U.S. dollar sales accounted for by jazz and classical music. As Table 4 shows, rock music sales are by far the largest category, with country and pop a distant second and third, respectively. Classical and jazz are much further down the list. Both show a decline over the period covered, although the classical pattern is mixed and the jazz trend may reflect the 1991 appearance of the "Urban Contemporary" category.

Factors Influencing Arts Participation: Hypotheses

Before the data presentations and statistical analyses of Parts II and III of this monograph, it is appropriate to consider some of the factors expected to influence arts participation. These give rise to the hypotheses that provide a framework or focus for the analyses.

The Impact of Place

The existence of economies of agglomeration in the art and culture industry now seems well established.[8] Such economies occur when firms are able to share one or more common productive factors in a given geographic region. For example, domestic automobile firms historically chose to locate in or near Detroit because they could share a trained labor force, transportation infrastructure, and access to raw materials. Similarly, radio and television programming

TABLE 4. Sales of Recorded Music by Genre (Percentage of U.S. Dollar Value)

Genre	1989	1990	1991	1992	1993
Rock	42.9	37.4	36.3	33.2	32.6
Country	6.8	8.8	12.5	16.5	17.5
Pop	14.4	13.6	11.7	11.4	11.7
Urban contemporary	NA	NA	9.3	8.8	9.9
Rap	NA	NA	8.9	7.9	7.8
Classical	4.3	4.1	3.9	4.4	4.0
Jazz	5.7	5.2	4.3	4.0	3.3

Source: Recording Industry Association of America, 1993 Consumer Profile

were drawn to New York City and to Hollywood because of those locations' respective talent pools generated by Broadway and the motion picture industry.

Another factor causing the arts to play a disproportionately large role in places with larger populations is the existence of threshold market sizes. Whereas a small community could scarcely support a symphony orchestra or a major art museum, most major metropolitan areas are able to support both, and additional cultural organizations as well.

Accordingly, one might expect that residents of urban regions would generally exhibit a greater likelihood of attending the live arts if for no other reason than because of greater availability. The data in Table 5 demonstrate that pattern. It is not so obvious that urban location is as conducive to participation via the media. Indeed, one could hypothesize in either direction: (1) urban location, which facilitates live attendance, facilitates development of a taste for the arts, which can also be partially satisfied by media participation; or (2) rural residents, denied ready access to live arts attendance, compensate through heavier media participation.

TABLE 5. Live Arts Participation Rates by Place, 1992 (Percentages of Adult Population)

Art Form	Percentage Urban	Rural
Jazz	12.2	6.3
Classical music	13.8	9.1
Opera	3.7	2.1
Musicals	19.2	12.8
Plays	15.3	8.5
Dance	7.6	5.9
Art museum	29.8	18.5

One might reasonably assume that media participation is not so constrained as live participation. Television and radio signals reach into the hinterlands, and recorded music is widely available. One need not reside in a major metropolitan area to tune in to public radio or television or to purchase a CD. Yet, as we shall see in subsequent chapters, media participation is also greater in urban areas than in rural areas. For example, participation through television is greater in urban than in rural areas for all the benchmark arts, although the relative proportions differ somewhat.

Age

Culture, it is said, is an acquired taste, and acquisition of taste takes time. It would follow then that participation would increase with age. The adult population has been classified into four groupings for the purposes of analysis in this monograph: young adults (18 through 29), "30-somethings" (30 through 44), middle-age (45 through 64), and "retired" (65 and above). These groupings are not entirely arbitrary. The youngest range from traditional college age to

those who, although in their late 20s, are still in the early stages of their adult lives. The 30-somethings, a category that actually extends into the mid-40s, have had opportunities to become established in their chosen lifestyles, to incur the obligations of adulthood, and to have made a career move or two. The middle-age range encompasses a variety of life experiences. The retired group, many of whom may not be retired at all, are experiencing the culmination of life's experiences.

Education

One way we acquire a taste for culture and the arts is exposure through education. It has been argued that appreciation of the more complex arts requires investment in "consumption skills," that is, learning to understand, say, opera.[9] Elementary and secondary school curricula typically offer art and music classes, and most colleges offer—and many require—art or music appreciation courses. Accordingly, we would reasonably expect participation to rise as education level rises.

For purposes of subsequent analyses, reported years of education have been aggregated into four groups: (1) none (respondents indicated zero years of education); (2) elementary (education did not proceed beyond grades 1 through 8); (3) high school (grades 9 through 12); and (4) college (including college and postgraduate education).

Income

The most obvious means by which income would impact arts participation would be ability to pay. Clearly, persons with higher incomes are more likely to be able to afford to attend a performing arts activity, to visit a museum, or to purchase a CD.[10] They are also more likely to purchase one or more television sets and radios; but in this latter case, once the device is purchased, the incremental costs of viewing or listening to the arts are likely to be very close to zero, especially for broadcasts or the more widely available cable channels.

As the data in Table 6 clearly indicate, both live and media participation rise with income. The difference is unlikely to be attributable to television access; in 1992, 93.7 percent of persons in households with incomes of less than $10,000 watched television, as did 95.2 percent of those in households with incomes between $10,000 and $20,000.[11] Interestingly enough, radio listening rises significantly with income category, from 77.4 percent of those individuals in the lowest income category to 91.6 percent of those in the highest.[12] But given the low prices of the simplest radios it seems unlikely that this reflects ability to pay. It would follow that the relationship between household income

TABLE 6. Arts Participation Rates by Income Group, 1992 (Percentages of Adult Population)

Art Form/Medium	Income Level			
	Poverty	Low	Moderate	High
Jazz				
Live	5.2	8.1	12.4	22.1
Television	12.5	17.2	19.5	27.9
Radio	18.8	24.3	31.9	44.4
Recorded	11.4	16.6	23.9	37.5
Classical music				
Live	5.8	9.3	14.4	28.6
Television	15.2	19.5	23.2	38.1
Radio	19.8	24.7	34.9	53.4
Recorded	12.7	17.7	27.8	45.2
Opera				
Live	1.8	1.7	3.3	12.2
Television	7.7	9.0	11.4	18.0
Radio	5.4	6.3	9.6	17.9
Recorded	3.1	3.8	7.9	16.0
Musicals				
Live	7.6	12.6	20.2	42.3
Television	9.1	11.9	13.2	18.7
Radio	2.7	2.9	3.6	6.4
Recorded	3.0	3.8	6.3	13.1
Plays				
Live	6.8	9.9	15.2	31.8
Television	10.0	12.2	16.8	24.7
Radio	2.4	2.3	3.1	4.2
Dance				
Live	4.6	6.3	8.2	9.5
Television	14.2	17.0	17.3	25.0
Art				
Live	13.4	20.6	31.6	49.8
Television	21.8	27.4	33.0	44.1

and broadcast media participation reflects influences of taste rather than purchasing power.

For analytical purposes, the several reported income bands were aggregated into four groups. These have been characterized as (1) "poverty," the lowest group (which does not necessarily correspond to census definitions of poverty

level); (2) "low"; (3) "moderate," which may be regarded as "middle class"; and (4) "high." Because of changes in both price levels and income groupings, the four groups are not comparable between the two time periods.

Gender

No obvious or intrinsic reason leads one to expect differential participation rates between men and women. Yet the differences are well known: women participate in the arts at higher rates than men. Perhaps this is rooted in early acculturation processes, when boys were often channeled into sports to the exclusion of arts.

Race

As with gender, there is no obvious source of race-based differentials in arts participation. Accounting for other factors that are correlated with race, such as income and education, may not eliminate racial differences. Racial or ethnic groups that are not European in origin may not be strongly attracted to such art forms as symphonic music and traditional opera, which are firmly rooted in Western artistic traditions. Minority groups may feel excluded from "mainstream" arts. The racial groupings of the survey are collapsed into white, black (African American), Asian, and Indian (including all Native Americans). Respondents of Hispanic origin are identified separately and do not identify themselves in only one of the racial groups.

Participation Patterns and Changes, 1982–1992

PART II

This part describes participation patterns in the arts via media, with particular focus on the roles of selected population demographic characteristics as suggested by the hypotheses of Part I. Tables and figures accompanying the text help to illustrate audience patterns and trends. The first section offers an overview of public participation for 1992, the most recent survey period. The second section contains more detailed participation data, and is organized by benchmark arts activity, beginning with jazz. The participation patterns are examined and discussed, including variations over time. The final section summarizes the findings.

Overview of Public Participation, 1992

Table 7 summarizes public participation data for each of the benchmark activities and each of the media alternatives for 1992. The last column of the table includes live participation for comparison purposes. With the exception of videocassette viewing, media participation tends to exceed live participation across the board. Musicals and plays, however, with their significant visual components, do not attract larger audio media audiences in the way that the other benchmark activities do. These data reflect the fact that the household penetration of television enables quick, easy, and relatively low cost access to televised arts. Participation by radio is higher for jazz and classical music, but television participation is higher for the performing arts—opera, musicals, and plays—with a notable visual component.

The levels of videocassette participation attest to the novelty of this medium as a means of arts participation. These comparatively modest rates suggest further analysis to be of limited benefit, but the data provide at least a baseline for future comparisons.

Participation Patterns

The following subsections examine participation rates for various demographic factors for each of the benchmark arts for the years 1982 and 1992. Each subsection includes a comprehensive table depicting participation rates by

TABLE 7. Rates of Public Participation in the Arts via Media, 1992 (Percentages of Adult Population)

Art Form	Television	Video	Radio	Recordings	Performance
Jazz	17.9	1.0	28.2	20.6	10.6
Classical music	21.9	1.2	30.8	23.8	12.5
Opera	10.7	0.5	8.7	6.9	3.3
Musicals	12.5	1.8	3.5	5.7	17.5
Plays	14.8	1.3	2.8	NA	13.5
Dance	17.1	0.8	NA	NA	7.1
Art	30.1	NA	NA	NA	26.7

the variables already indicated: urban versus rural, gender, education, age, race, and income. The tables offer a summary of participation rates in each year as well as a comparison of rates over time. In addition to the tables, charts and associated tables offer a quick overview of participation rates and changes over time and by medium for age, education, and racial groups. Income is not accorded a separate chart since the data are not comparable over time. Those variables—location and gender—that take on only two values also do not merit separate charts. The tables and charts do not include the relatively minuscule "none" group of the education variable.

Two statistical tests were applied to each component of the tables: a Pearson *chi-square test* of independence and a *phi-coefficient,* which indicates strength of association. In every instance, the Pearson test indicates that the variables (e.g., participation by race, participation by income, etc.) are not independent of each other—that is, the observed patterns are not simply random events. Furthermore, the phi-coefficient indicates in every case that the associations are statistically significant. A major shortcoming of this approach—measuring association by two variables at a time—is that it could be misleading. For example, an apparent association between participation and income may actually reflect an association between participation and education, which is strongly correlated with income. This limits the inferences that can be drawn from the tests. Part III draws upon statistical techniques that control for the separate effects of variables that are themselves correlated.

Jazz

As indicated in Table 8, overall jazz participation via media is higher than live participation in both 1982 and 1992. Television viewing and listening to recordings show little change over the decade, while radio listening rose by

TABLE 8. Jazz Participation Rates by Variable, 1982 and 1992 (Percentages of Adult Population)

	Live		Television		Radio		Recording	
Variable	**1982**	**1992**	**1982**	**1992**	**1982**	**1992**	**1982**	**1992**
Total	9.6	10.6	18.0	17.9	18.1	28.2	20.2	20.6
Location								
Urban	11.0	12.2	20.3	19.9	20.8	31.5	23.5	23.5
Rural	6.5	6.3	12.6	12.7	11.8	19.4	12.1	12.7
Gender								
Male	10.3	11.9	19.6	19.4	20.5	30.9	21.3	22.6
Female	9.0	9.4	16.7	16.5	16.0	25.7	19.2	18.7
Education								
Elementary	1.3	0.8	4.5	6.7	6.2	9.4	4.7	4.6
High school	6.1	4.9	15.2	12.8	15.1	19.6	16.0	12.5
College	17.0	18.4	25.9	25.3	25.6	40.5	30.5	31.8
Age								
Young adult	17.0	12.4	21.0	14.8	27.4	30.1	29.5	23.2
30-something	9.7	12.9	19.0	20.1	17.9	34.5	20.4	25.5
Middle age	6.0	9.7	19.1	19.6	15.3	26.0	17.6	18.4
Retired	1.8	4.8	9.1	15.1	6.0	15.9	6.6	10.1
Race								
White	8.9	10.0	16.7	16.7	15.8	26.0	18.2	18.8
Black	15.5	16.1	28.1	27.8	35.9	45.4	36.5	35.5
Other	8.3	6.5	21.7	14.4	23.4	25.1	20.3	15.1
Income[a]								
Poverty	7.6	5.2	12.2	12.5	16.9	18.8	13.7	11.4
Low	8.8	8.1	17.9	17.2	18.0	24.3	20.4	16.6
Moderate	11.8	12.4	21.6	19.5	19.0	31.9	24.2	23.9
High	16.7	22.1	26.0	27.9	19.6	44.4	30.2	37.5

[a]Groupings not comparable between periods

slightly more than 10 percentage points. Participation by all modes is higher in urban than in rural areas, again with little change over time except for radio. Jazz is the only benchmark art with greater male and black participation rates. Many jazz artists are black, and much of jazz is rooted in the African American cultural experience.

As hypothesized, participation rises with education and income, but, somewhat surprisingly, falls with age. Jazz seems to be a young persons' art form. Some patterns of change over time are noteworthy. Except for radio, media participation by the high school group decreased noticeably over time. Among the age groupings, participation rose over time except among young adults. Although this group's radio listening rose, other forms of media participation by young adults declined, suggesting that the jazz audience is aging.

FIGURE 1. Jazz Participation Rates by Age, 1982 and 1992 (Percent)

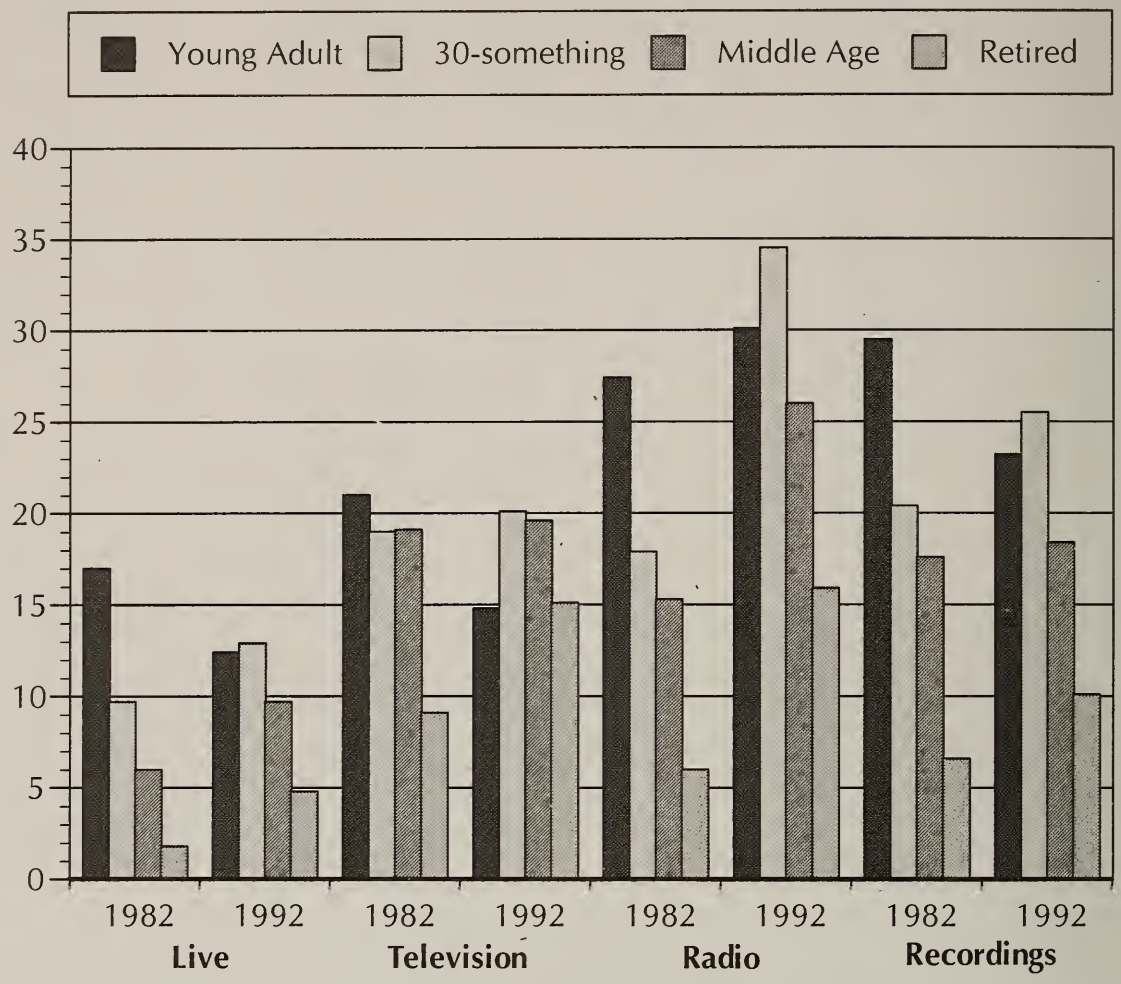

TABLE 9. Change in Jazz Participation Rates by Age, 1982–1992

Age Group	Live	Television	Radio	Recordings
Young adult	–4.6	–6.2	2.7	–6.3
30-something	3.2	1.1	16.6	5.1
Middle age	3.7	0.5	10.7	0.8
Retired	3.0	6.0	9.9	3.5

Note: Numbers indicate increase or decrease in percentage points.

FIGURE 2. Jazz Participation Rates by Education, 1982 and 1992 (Percent)

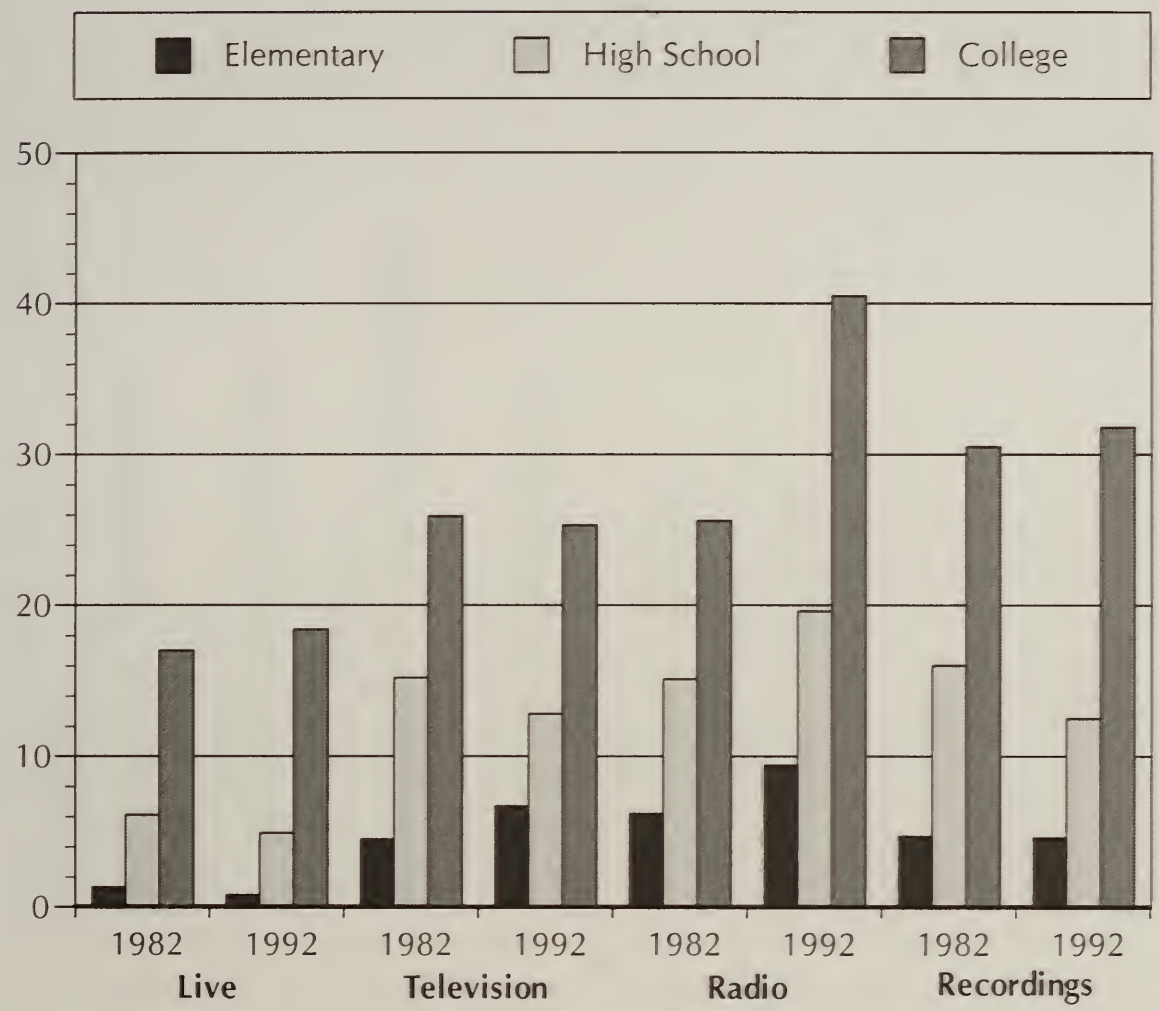

TABLE 10. Change in Jazz Participation Rates by Education, 1982–1992

Education[a]	Live	Television	Radio	Recordings
Elementary	–0.5	2.2	3.2	–0.1
High school	–1.2	–2.4	4.5	–3.5
College	1.4	–0.6	14.9	1.3

Note: Numbers indicate increase or decrease in percentage points.
[a]"None" not included

FIGURE 3. Jazz Participation Rates by Race, 1982 and 1992 (Percent)

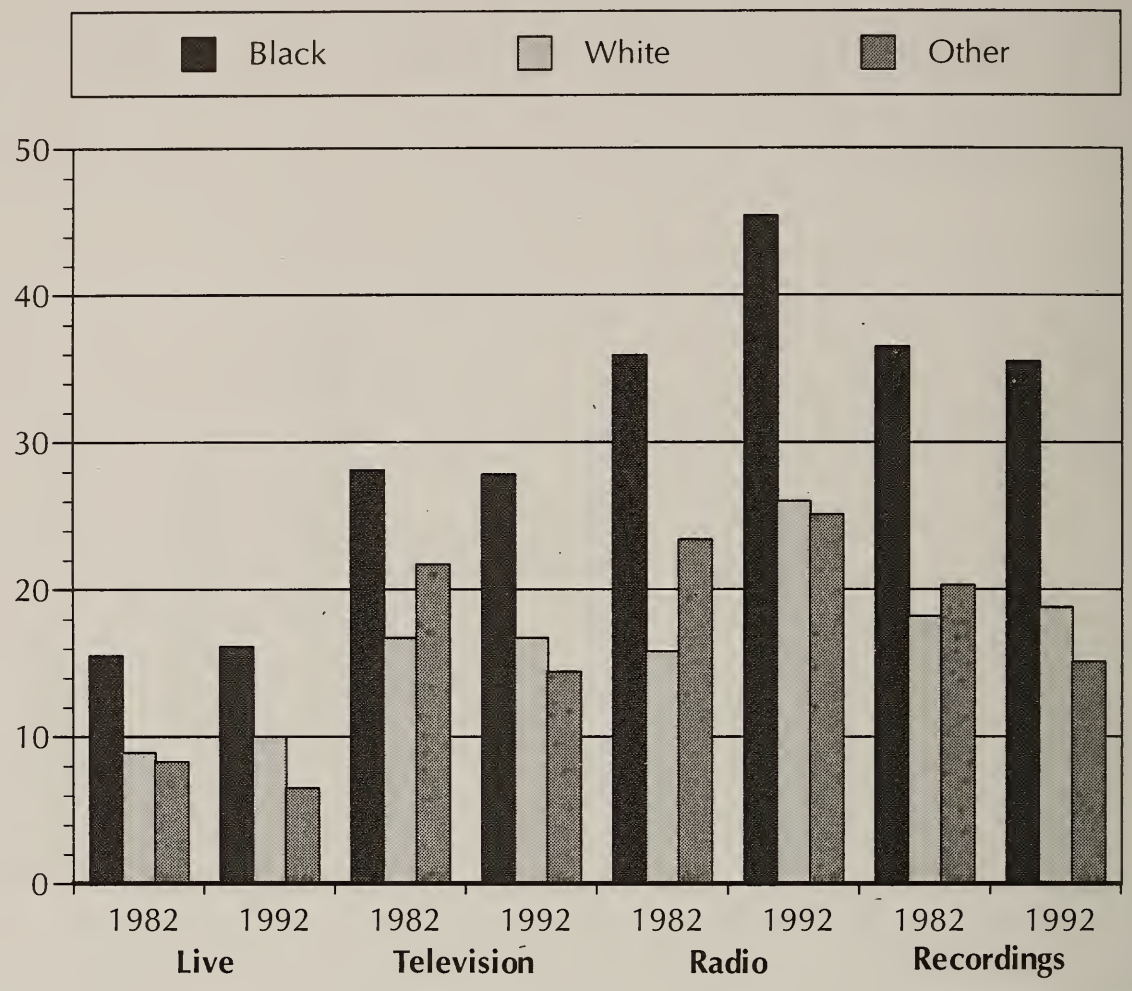

TABLE 11. Change in Jazz Participation Rates by Race, 1982–1992

Race	Live	Television	Radio	Recordings
White	1.1	0.0	10.2	0.6
Black	0.6	–0.3	9.5	–1.0
Other	–1.8	–7.3	1.7	–5.2

Note: Numbers indicate increase or decrease in percentage points.

Classical Music

As indicated in Table 12, participation in classical music via media exceeds live participation. Live and television participation have fallen slightly over time, while radio increased substantially and recordings a modest amount. The rise in radio participation is true for all of the demographic groupings. Participation is higher among urban and female respondents, but male participation rates rose over the decade at least slightly in three of the four categories. As expected, participation rises with education, age (though most categories show a lower level of participation among the "retired" age group), and income. White participation is higher than black, while the "other" category shows a mixed pattern.

TABLE 12. Classical Music Participation Rates by Variable, 1982 and 1992 (Percentages of Adult Population)

	Live		Television		Radio		Recordings	
Variable	**1982**	**1992**	**1982**	**1992**	**1982**	**1992**	**1982**	**1992**
Total	13.0	12.5	24.7	21.9	19.9	30.8	22.1	23.8
Location								
Urban	14.7	13.8	26.5	23.6	21.5	33.0	23.1	25.7
Rural	9.3	9.1	20.4	17.3	16.2	24.8	19.8	18.9
Gender								
Male	11.3	11.5	23.3	20.3	20.5	30.7	21.2	23.1
Female	14.6	13.4	25.9	23.3	19.4	30.9	22.9	24.5
Education								
Elementary	1.7	1.9	10.1	9.8	8.3	11.8	6.2	5.8
High school	6.6	5.8	19.6	15.8	13.0	19.6	14.5	13.2
College	25.2	21.4	36.1	30.5	32.6	46.0	37.1	38.0
Age								
Young adult	11.5	9.9	17.2	14.0	16.5	24.3	19.8	22.0
30-something	15.3	11.8	25.3	19.7	23.4	32.9	25.6	25.6
Middle age	13.8	16.1	33.2	27.1	22.7	36.5	25.7	26.5
Retired	10.2	11.8	23.3	29.2	15.5	26.6	14.2	18.5
Race								
White	13.9	13.2	25.6	22.5	20.2	32.1	22.9	25.2
Black	6.7	6.9	15.9	16.1	15.4	19.6	13.2	12.6
Other	9.4	12.8	30.9	25.3	29.2	36.4	31.4	25.9
Income[a]								
Poverty	8.2	5.8	15.1	15.2	13.4	19.8	12.8	12.7
Low	10.5	9.3	25.1	19.5	18.0	24.7	21.4	17.7
Moderate	18.3	14.4	29.8	23.2	25.3	34.9	27.7	27.8
High	30.1	28.6	47.6	38.1	40.0	53.4	38.9	45.2

[a]Groupings not comparable between periods

FIGURE 4. Classical Music Participation Rates by Age, 1982 and 1992 (Percent)

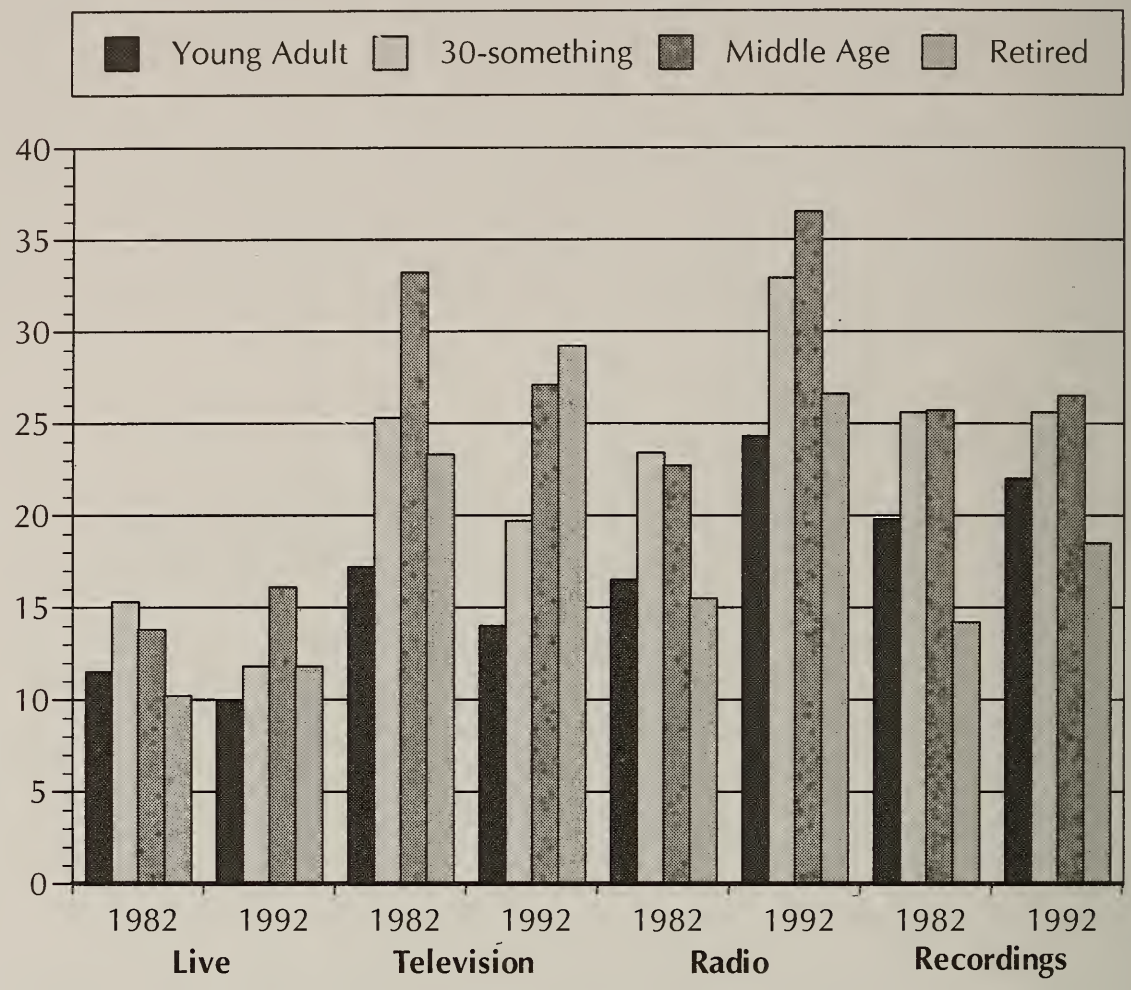

TABLE 13. Change in Classical Music Participation Rates by Age, 1982–1992

Age Group	Live	Television	Radio	Recordings
Young adult	–1.6	–3.2	7.8	2.2
30-something	–3.5	–5.6	9.5	0.0
Middle age	2.3	–6.1	13.8	0.8
Retired	1.6	5.9	11.1	4.3

Note: Numbers indicate increase or decrease in percentage points.

FIGURE 5. Classical Music Participation Rates by Education, 1982 and 1992 (Percent)

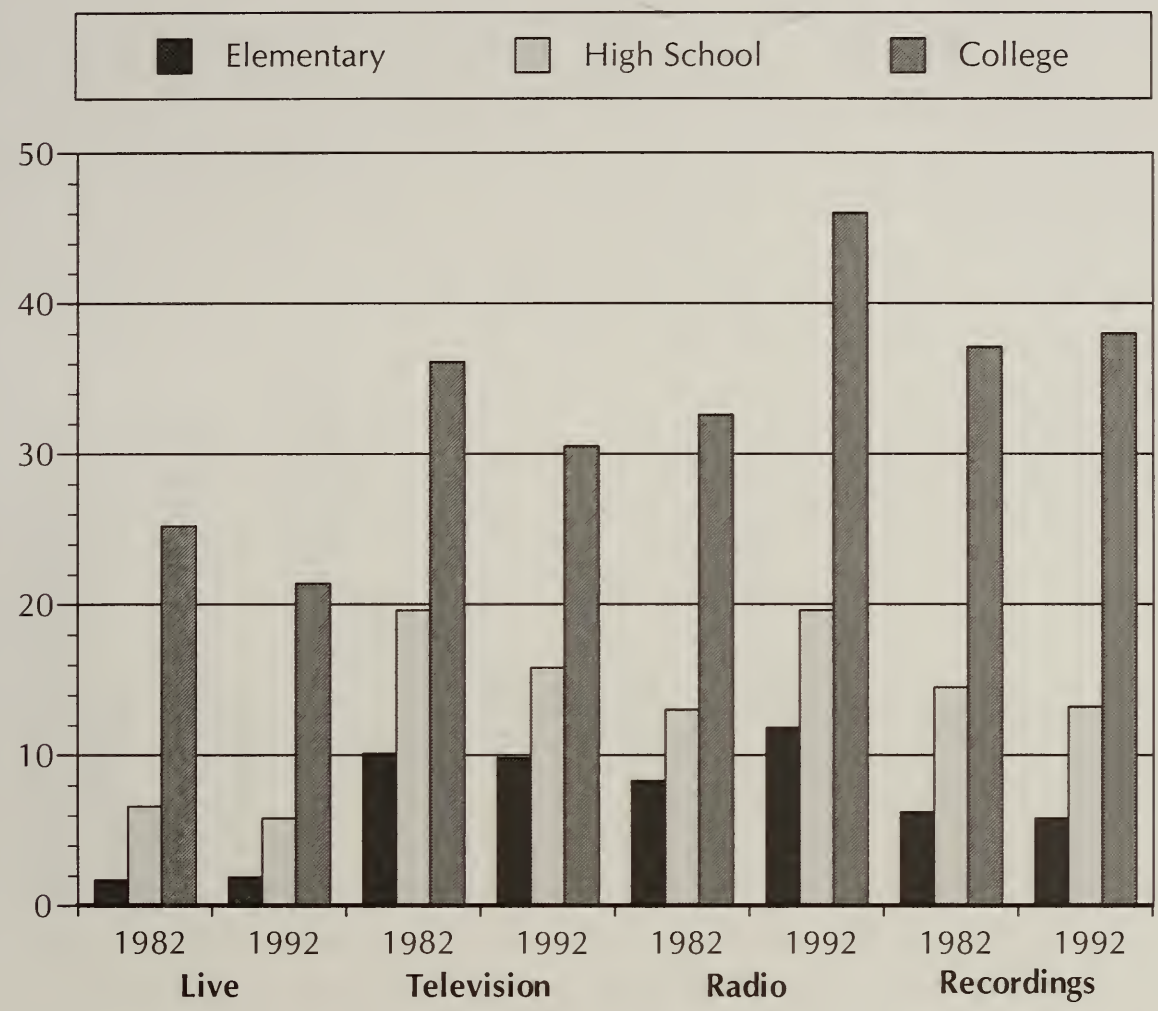

TABLE 14. Change in Classical Music Participation Rates by Education, 1982–1992

Education[a]	Live	Television	Radio	Recordings
Elementary	0.2	–0.3	3.5	–0.4
High school	–0.8	–3.8	6.6	–1.3
College	–3.8	–5.6	13.4	0.9

Note: Numbers indicate increase or decrease in percentage points.
[a]"None" not included

FIGURE 6. Classical Music Participation Rates by Race, 1982 and 1992 (Percent)

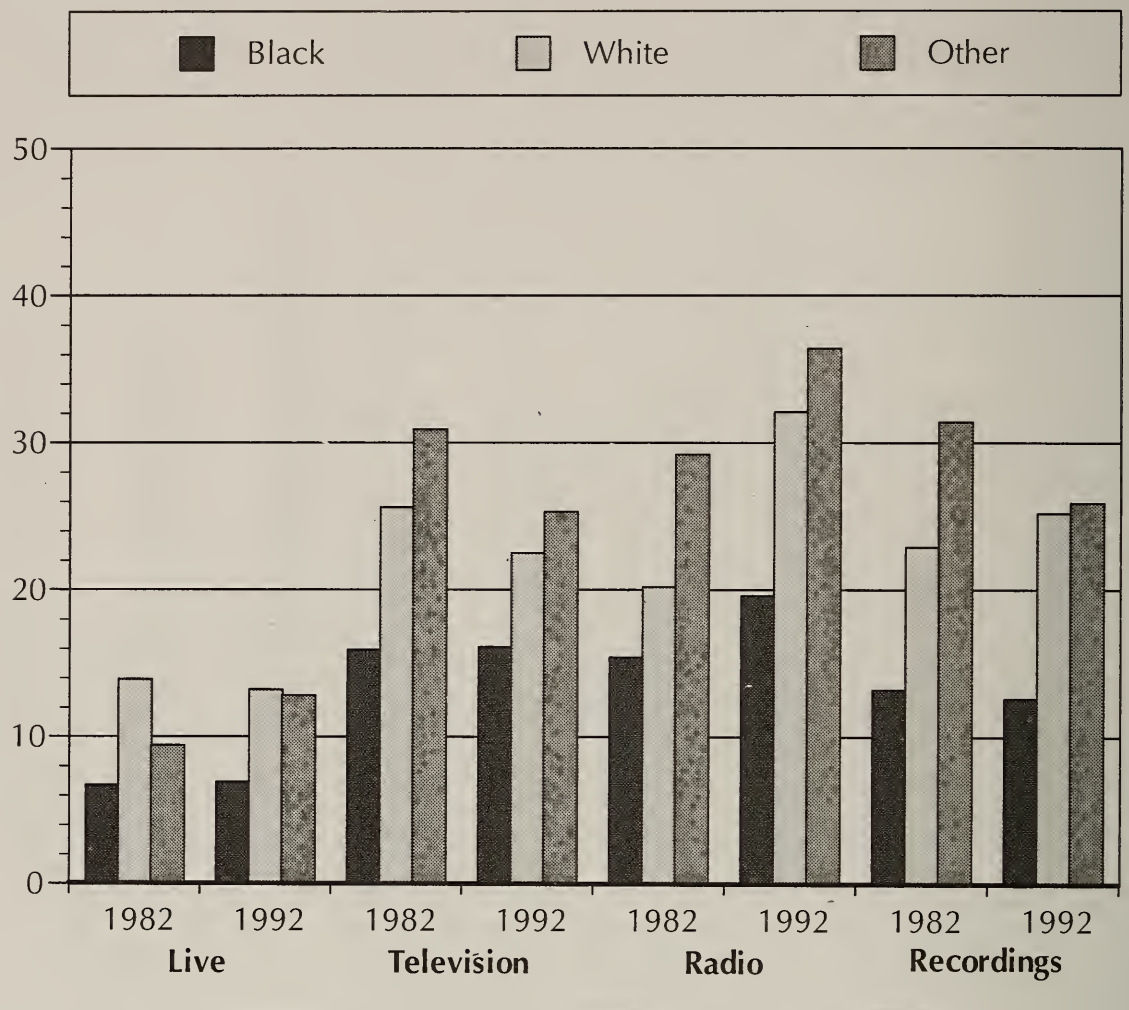

Table 15. Change in Classical Music Participation Rates by Race, 1982–1992

Race	Live	Television	Radio	Recordings
White	–0.7	–3.1	11.9	2.3
Black	0.2	0.2	4.2	–0.6
Other	3.4	–5.6	7.2	–5.5

Note: Numbers indicate increase or decrease in percentage points.

For the most part, live and television participation fell over the decade, even for the college-educated group, suggesting that education is not so strong a determinant of tastes as it once might have been. These categories of participation also declined for the younger age groups, an indicator that the classical music audience is aging and not replenishing itself.

The dramatic increase in radio participation deserves further mention. The wide reach of radio stations devoted exclusively to classical music and the growth of both National Public Radio and Public Radio International mean that anyone with a radio has access to classical music virtually any time of day. This is not true of television. As discussed in Part I, few broadcast or cable networks other than public television offer classical music, and public television devotes only some 17 percent of its programming to cultural events. Interestingly, this popularity of radio participation has not carried over to recordings. Perhaps the sound quality available on compact discs is offset by the relatively high price of CD players, including automobile stereo systems.

Opera

In 1992 opera ranked lowest among the benchmark arts for live and television participation, and it was a distant third in both radio and recordings. As shown in Table 16, participation rates were higher in both 1982 and 1992 for urban than for rural respondents and for female than for male respondents. Interestingly, television participation exceeded participation rates for live performances and the other media. This may reflect the visual nature of opera. Viewers can easily consult television listings to learn when a performance is scheduled, which is not so true of radio.

Participation increases with education, age (except for the "retired" group), and income. Except for radio, participation by the high school and college-educated groups has not increased over the decade.

Live and radio participation in general rose over the decade. It is interesting to note that black participation rose for live performances and all media except recordings. Indeed, black participation even rose for television, which declined for nearly every other demographic grouping.

TABLE 16. Opera Participation Rates by Variable, 1982 and 1992 (Percentages of Adult Population)

	Live		Television		Radio		Recordings	
Variable	**1982**	**1992**	**1982**	**1992**	**1982**	**1992**	**1982**	**1992**
Total	3.0	3.3	12.0	10.7	7.1	8.7	7.5	6.9
Location								
Urban	3.7	3.7	13.4	12.0	7.9	9.4	8.3	7.8
Rural	1.5	2.1	8.7	7.4	5.2	6.6	5.4	4.7
Gender								
Male	2.7	3.1	10.5	10.0	7.2	8.4	7.1	6.6
Female	3.3	3.5	13.4	11.4	7.0	8.9	7.7	7.3
Education								
Elementary	0.5	0.6	4.3	4.9	3.8	3.6	2.8	2.1
High school	1.6	1.3	9.7	7.0	4.1	4.9	5.4	3.4
College	5.8	5.8	17.6	15.7	11.9	13.6	11.7	11.4
Age								
Young adult	2.3	2.5	6.2	5.7	4.9	4.0	3.4	4.3
30-something	3.2	3.3	11.7	9.2	5.9	7.4	7.7	6.3
Middle age	3.7	4.1	17.9	14.7	10.3	12.7	11.7	9.9
Retired	2.9	3.1	13.5	14.8	7.7	11.5	7.2	7.2
Race								
White	3.2	3.4	12.1	10.7	7.2	9.0	7.9	7.3
Black	1.3	1.8	9.3	10.4	5.3	6.0	3.9	3.7
Other	3.0	5.3	20.1	12.3	12.0	8.3	8.3	9.4
Income[a]								
Poverty	1.7	1.8	7.5	7.7	5.1	5.4	3.8	3.1
Low	2.0	1.7	11.6	9.0	6.1	6.3	7.1	4.5
Moderate	4.1	3.3	15.3	11.4	8.1	9.6	9.2	7.9
High	10.0	12.2	24.4	18.0	15.5	17.9	13.5	16.0

[a]Groupings not comparable between periods

FIGURE 7. Opera Participation Rates by Age, 1982 and 1992 (Percent)

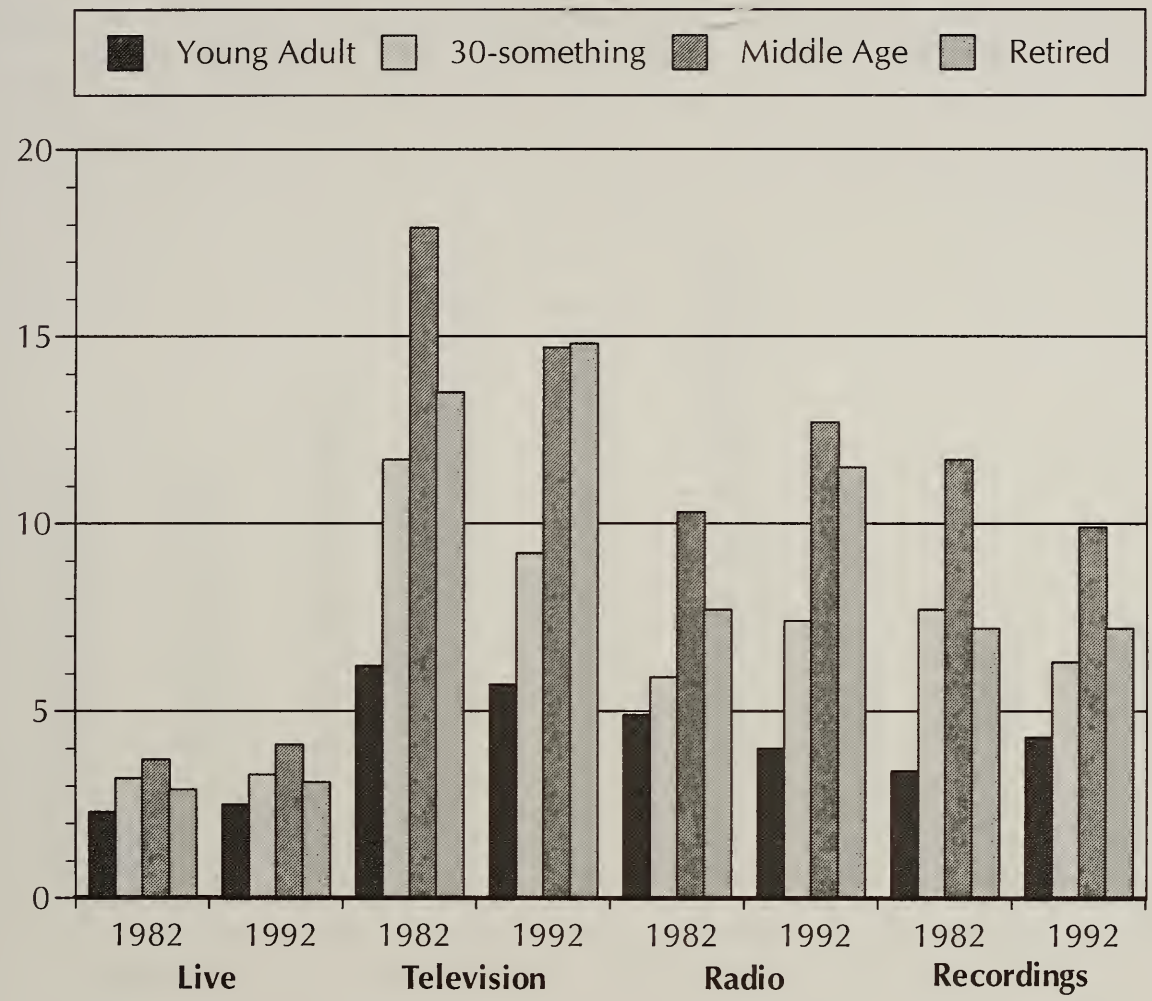

TABLE 17. Change in Opera Participation Rates by Age, 1982–1992

Age Group	Live	Television	Radio	Recordings
Young adult	0.2	–0.5	–0.9	0.9
30-something	0.1	–2.5	1.5	–1.4
Middle age	0.4	–3.2	2.4	–1.8
Retired	0.2	1.3	3.8	0.0

Note: Numbers indicate increase or decrease in percentage points.

FIGURE 8. Opera Participation Rates by Education, 1982 and 1992 (Percent)

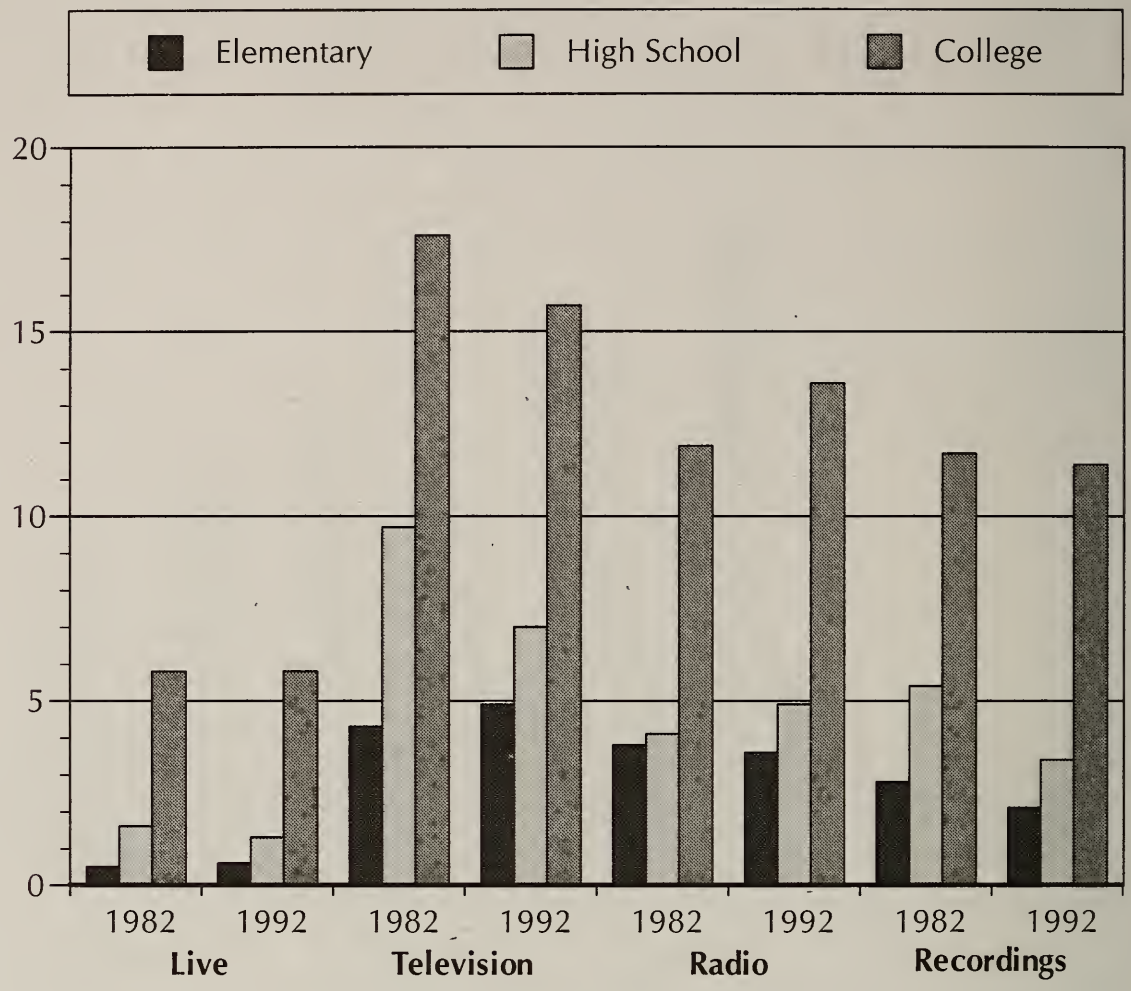

TABLE 18. Change in Opera Participation Rates by Education, 1982–1992

Education[a]	Live	Television	Radio	Recordings
Elementary	0.1	0.6	–0.2	–0.7
High school	–0.3	–2.7	0.8	–2.0
College	0.0	–1.9	1.7	–0.3

Note: Numbers indicate increase or decrease in percentage points.
[a]"None" not included

FIGURE 9. Opera Participation Rates by Race, 1982 and 1992 (Percent)

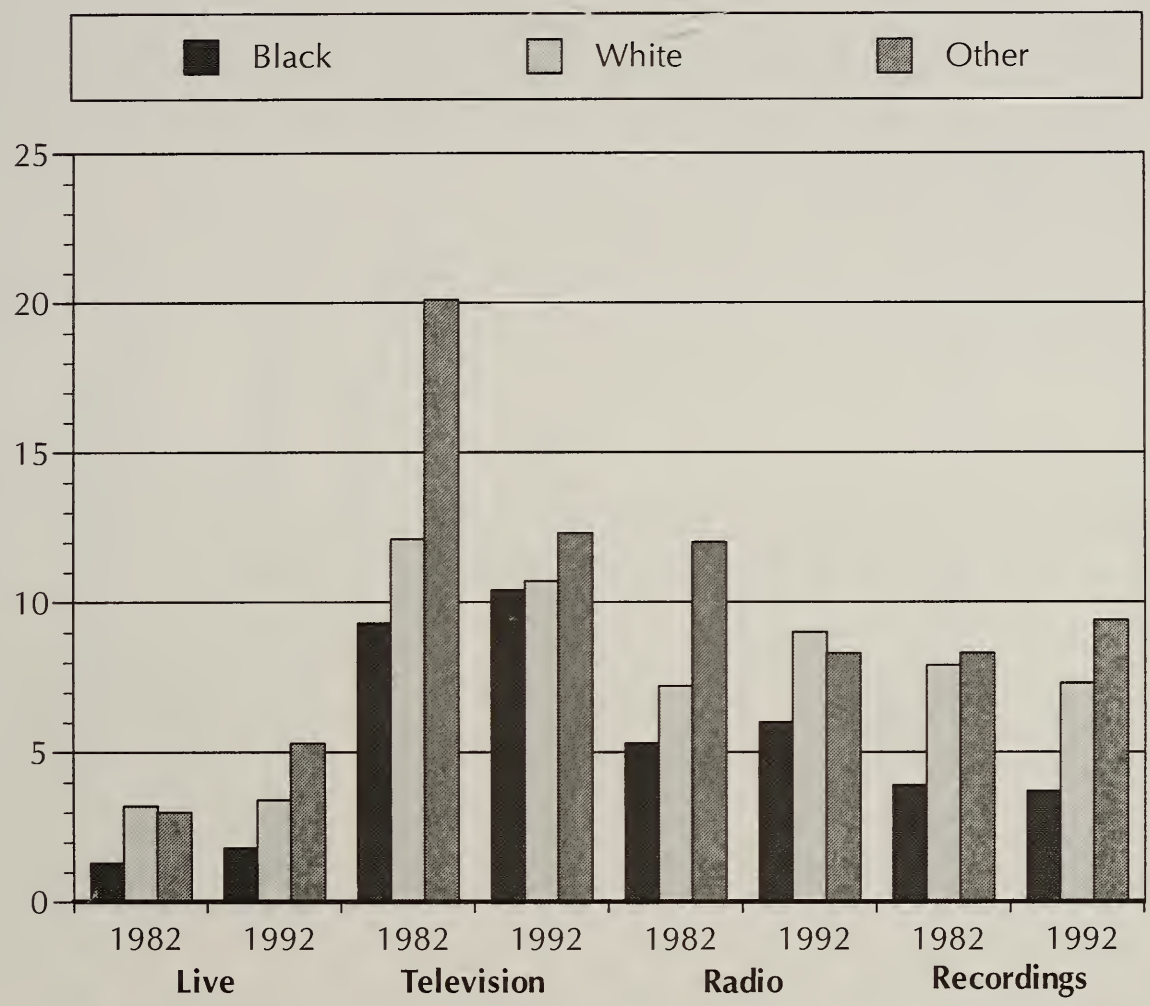

TABLE 19. Change in Opera Participation Rates by Race, 1982–1992

Race	Live	Television	Radio	Recordings
White	0.2	–1.4	1.8	–0.6
Black	0.5	1.1	0.7	–0.2
Other	2.3	–7.8	–3.7	1.1

Note: Numbers indicate increase or decrease in percentage points.

Musicals

Table 20 indicates that, with few exceptions, live and media participation rates fell from 1982 to 1992. Live and television participation far exceed participation via both radio and recordings, due undoubtedly to the visual nature of musicals. Urban participation exceeds rural, and female participation generally exceeds male. Participation rises with education, age (except for the "retired" group), and income.

The rather dramatic fall in television participation probably reflects a supply-side phenomenon, which exacerbated the overall decline. Participation in musicals via media declined for all age groups except the retired, for high school and college groups, and generally for all racial groups.

TABLE 20. Musical Participation Rates by Variable, 1982 and 1992 (Percentages of Adult Population)

	Live		Television		Radio		Recordings	
Variable	**1982**	**1992**	**1982**	**1992**	**1982**	**1992**	**1982**	**1992**
Total	18.6	17.4	20.4	12.5	4.3	3.5	8.4	5.7
Location								
Urban	21.2	19.2	22.9	13.6	5.1	3.8	9.9	6.5
Rural	13.1	12.8	14.3	9.7	2.6	2.6	4.7	3.5
Gender								
Male	16.6	15.1	18.8	11.4	4.6	3.4	7.2	5.3
Female	20.5	19.6	21.7	13.6	4.1	3.6	9.3	6.0
Education								
Elementary	4.1	3.1	9.0	6.7	1.1	2.4	1.9	2.1
High school	11.5	10.4	15.7	9.4	2.8	1.9	4.4	2.4
College	32.9	27.5	30.3	17.0	7.3	5.4	15.6	9.8
Age								
Young adult	17.6	15.3	18.1	7.4	3.6	2.0	7.0	4.8
30-something	22.1	18.0	20.7	11.4	4.2	3.1	9.4	5.9
Middle age	20.0	21.0	23.2	15.6	5.9	4.6	11.5	7.2
Retired	12.0	13.6	19.1	17.2	3.5	4.7	3.8	4.1
Race								
White	19.8	18.1	20.7	12.7	4.2	3.6	9.1	6.0
Black	10.0	14.1	17.4	11.3	4.4	2.5	1.9	2.9
Other	13.1	11.7	19.8	12.9	8.1	5.1	10.2	7.3
Income[a]								
Poverty	9.2	7.6	12.9	9.1	2.7	2.7	4.2	3.0
Low	15.6	12.6	19.8	11.9	3.7	2.9	6.7	3.8
Moderate	28.0	20.2	26.3	13.2	4.5	3.6	12.6	6.3
High	43.4	42.3	35.6	18.7	11.3	6.4	20.6	13.1

[a]Groupings not comparable between periods

FIGURE 10. Musical Participation Rates by Age, 1982 and 1992 (Percent)

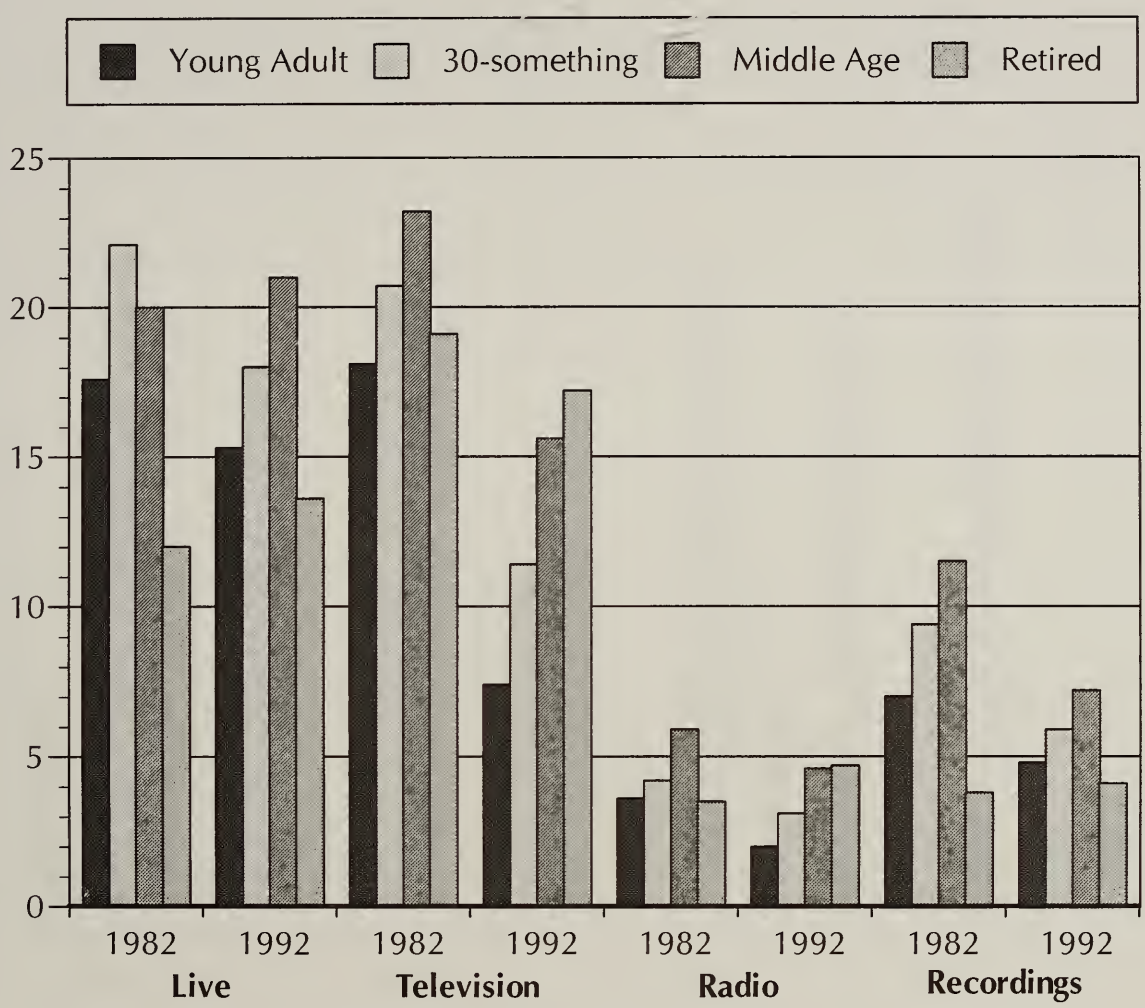

TABLE 21. Change in Musical Participation Rates by Age, 1982–1992

Age Group	Live	Television	Radio	Recordings
Young adult	–2.4	–10.7	–1.6	–2.2
30-something	–4.1	–9.3	–1.1	–3.5
Middle age	1.0	–7.6	–1.3	–4.3
Retired	1.6	–1.9	1.2	0.3

Note: Numbers indicate increase or decrease in percentage points.

FIGURE 11. Musical Participation Rates by Education, 1982 and 1992 (Percent)

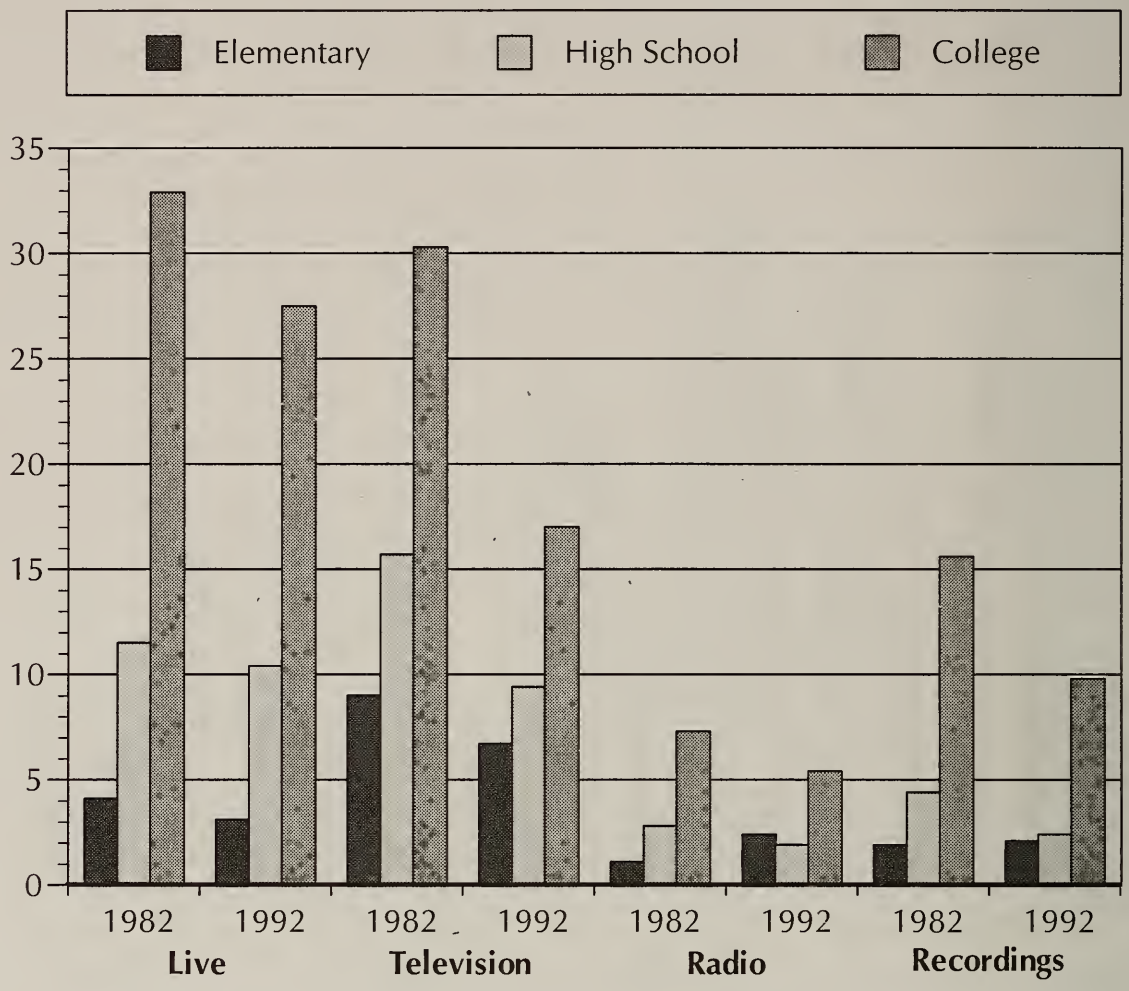

TABLE 22. Change in Musical Participation Rates by Education, 1982–1992

Education[a]	Live	Television	Radio	Recordings
Elementary	–1.0	–2.3	1.3	0.2
High school	–1.1	–6.3	–0.9	–2.0
College	–5.4	–13.3	–1.9	–5.8

Note: Numbers indicate increase or decrease in percentage points.
[a]"None" not included

FIGURE 12. Musical Participation Rates by Race, 1982 and 1992 (Percent)

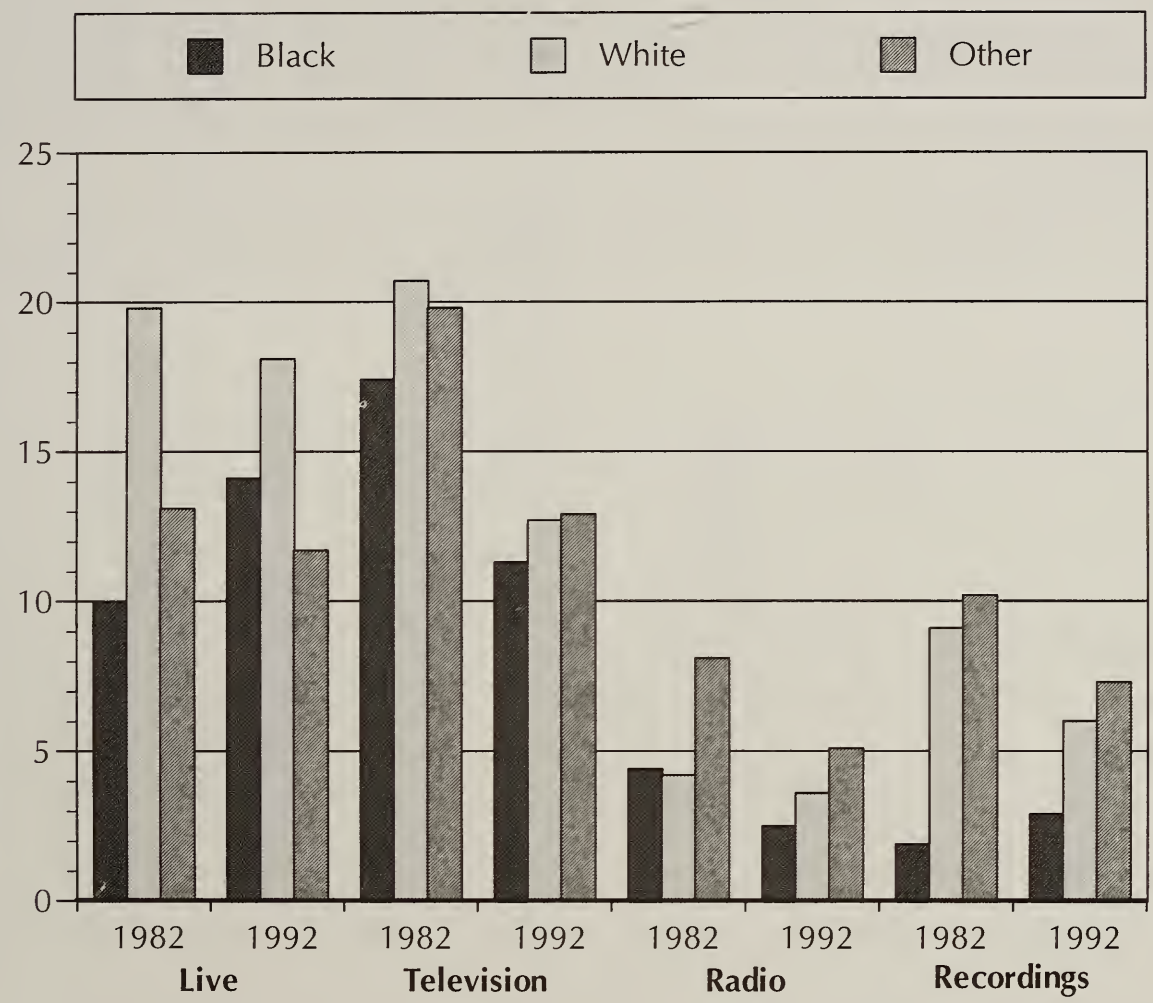

TABLE 23. Change in Musical Participation Rates by Race, 1982–1992

Race	Live	Television	Radio	Recordings
White	–1.7	–8.0	–0.6	–3.1
Black	4.1	–6.1	–1.9	1.0
Other	–1.4	–6.9	–3.0	–2.9

Note: Numbers indicate increase or decrease in percentage points.

Theater (Plays)

Perhaps the most dramatic pair of numbers in Table 24 is the one that shows the total decline in the viewing of plays on television, from a rate of 25.9 percent in 1982 to 14.8 percent in 1992. The decline is consistent over all demographic groups and to some extent reflects the reduced availability of theater per se on television and the stiff competition from other dramatic offerings on cable television.

Participation rises with education, age (except for the "retired" group), and income. Although participation by whites is generally higher than participation

TABLE 24. Theater (Plays) Participation Rates by Variable, 1982 and 1992 (Percentages of Adult Population)

	Live		Television		Radio	
Variable	**1982**	**1992**	**1982**	**1992**	**1982**	**1992**
Total	11.9	13.5	25.9	14.8	3.8	2.8
Location						
Urban	13.5	15.3	28.4	16.4	4.3	3.1
Rural	8.5	8.5	20.0	10.6	2.6	2.0
Gender						
Male	10.8	12.3	25.2	14.0	3.7	3.1
Female	12.9	14.6	26.6	15.6	3.9	2.6
Education						
Elementary	1.7	1.8	7.2	6.4	0.7	1.5
High school	6.1	7.0	20.1	11.0	2.9	1.8
College	23.0	22.4	39.5	20.4	6.0	4.2
Age						
Young adult	11.1	12.5	25.3	8.7	5.3	2.0
30-something	14.3	13.5	27.2	13.6	3.3	3.4
Middle age	12.5	16.2	28.4	19.5	3.6	3.0
Retired	8.2	10.6	20.3	18.6	2.4	2.5
Race						
White	12.8	13.7	27.0	15.2	4.0	2.6
Black	5.8	12.2	18.2	12.7	2.7	4.1
Other	7.9	10.5	21.3	12.1	2.2	3.7
Income[a]						
Poverty	6.1	6.8	16.0	10.0	3.8	2.4
Low	9.5	9.9	25.0	12.2	3.8	2.3
Moderate	17.8	15.2	33.5	16.8	4.6	3.1
High	33.1	31.8	34.0	24.7	2.1	4.2

[a]Groupings not comparable between periods

FIGURE 13. Theater (Plays) Participation Rates by Age, 1982 and 1992 (Percent)

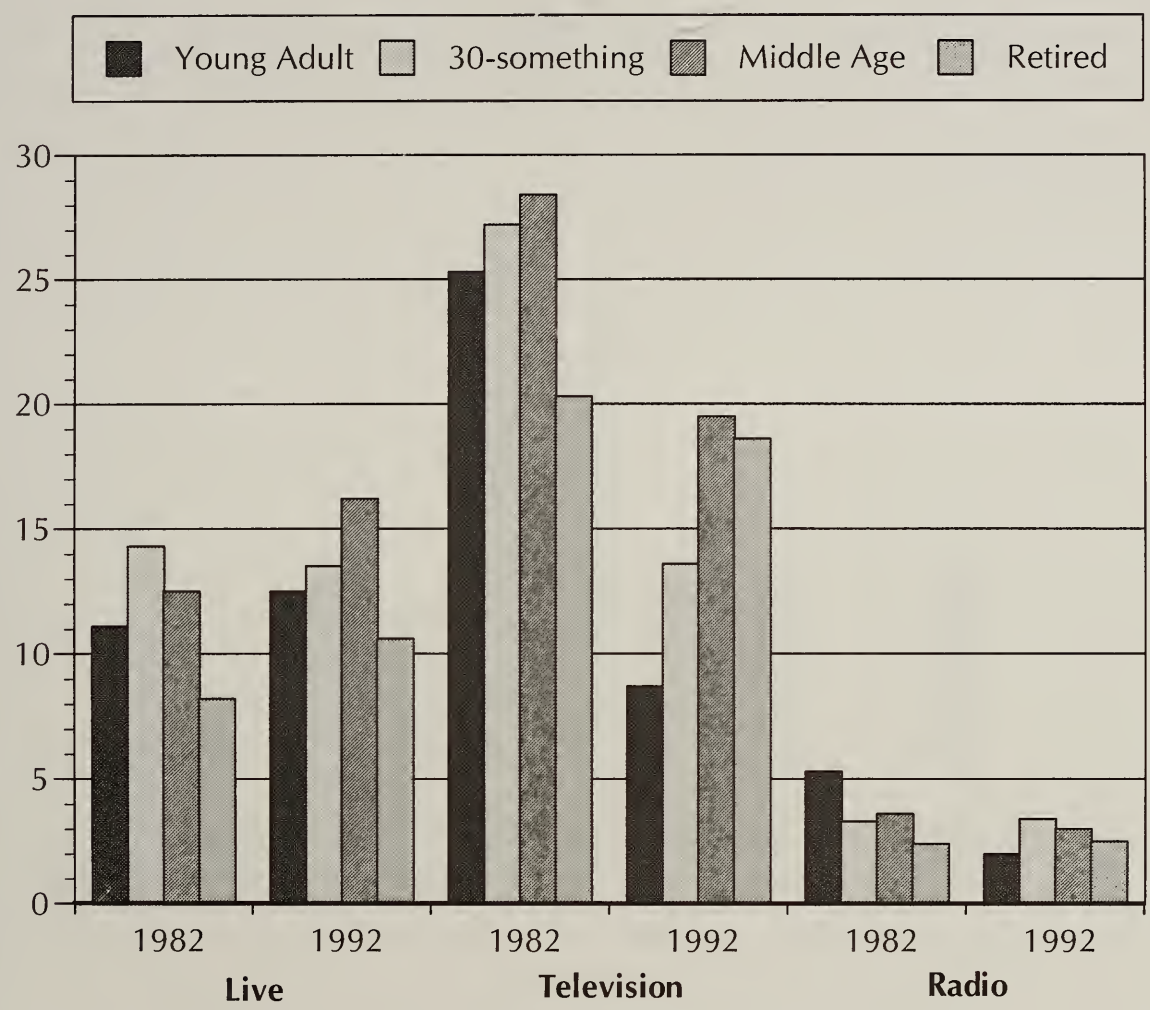

TABLE 25. Change in Theater (Plays) Participation Rates by Age, 1982–1992

Age Group	Live	Television	Radio
Young adult	1.4	–16.6	–3.3
30-something	–0.8	–13.6	0.1
Middle age	3.7	–8.9	–0.6
Retired	2.4	–1.7	0.1

Note: Numbers indicate increase or decrease in percentage points.

FIGURE 14. Theater (Plays) Participation Rates by Education, 1982 and 1992 (Percent)

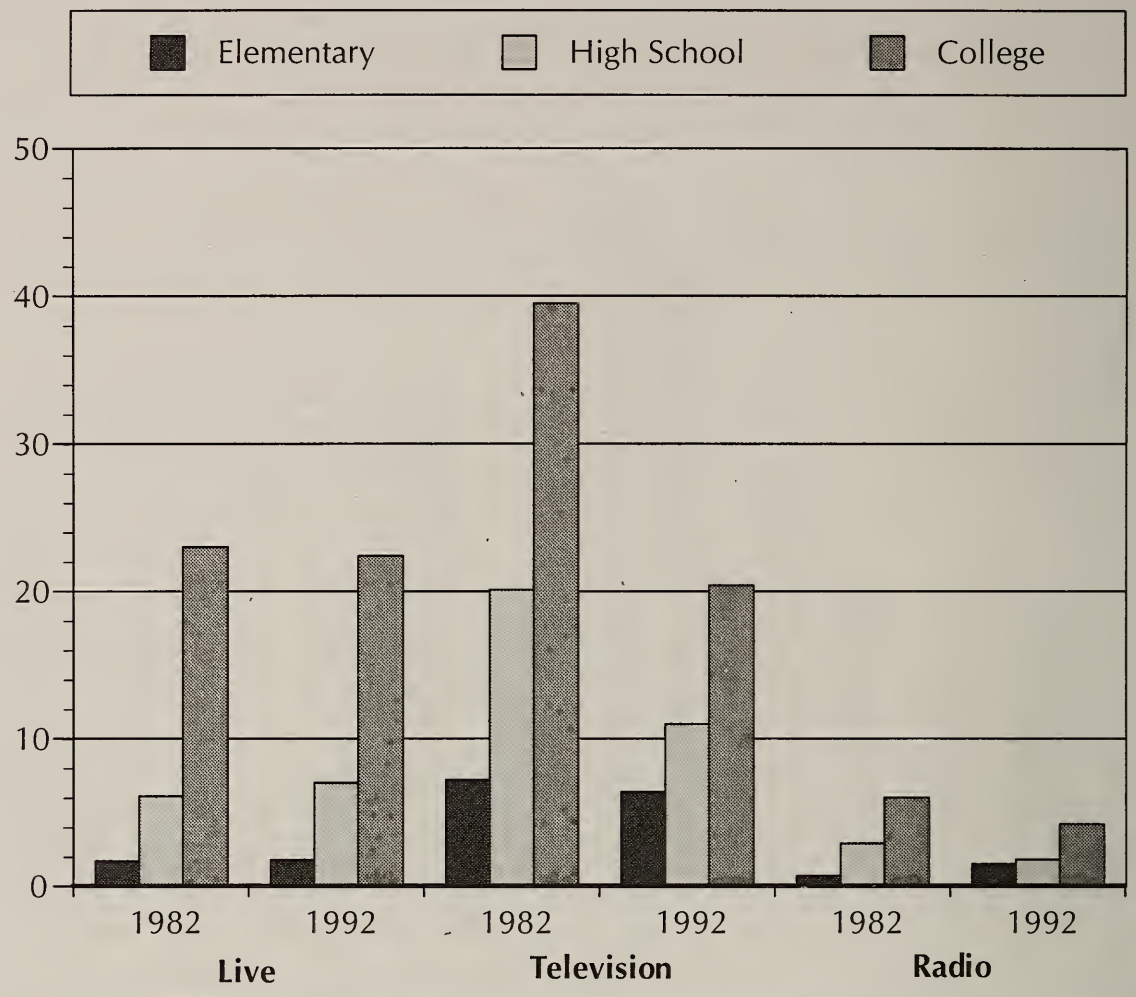

TABLE 26. Change in Theater (Plays) Participation Rates by Education, 1982–1992

Education[a]	Live	Television	Radio
Elementary	0.1	–0.8	0.8
High school	0.9	–9.1	–1.1
College	–0.6	–19.1	–1.8

Note: Numbers indicate increase or decrease in percentage points.
[a]"None" not included

FIGURE 15. Theater (Plays) Participation Rates by Race, 1982 and 1992 (Percent)

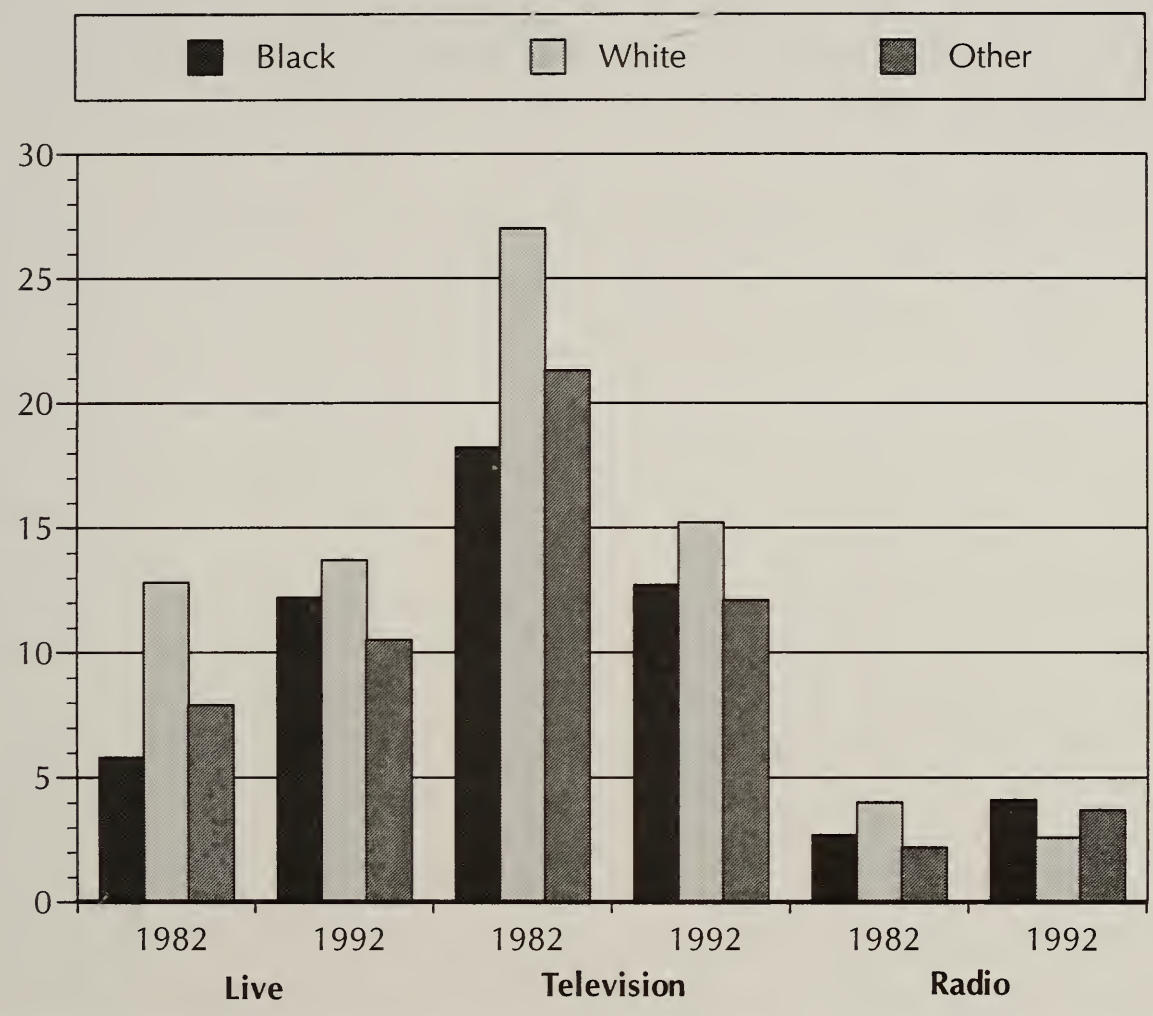

TABLE 27. Change in Theater (Plays) Participation Rates by Race, 1982–1992

Race	Live	Television	Radio
White	0.9	–11.8	–1.4
Black	6.4	–5.5	1.4
Other	2.6	–9.2	1.5

Note: Numbers indicate increase or decrease in percentage points.

by other groups, black attendance at live performances and participation via radio rose from 1982 to 1992. Furthermore, the decline in black participation via television was not so pronounced as declines in this category overall. It is tempting to attribute this to the growth of black theater, the development of black acting talent, and the success of such playwrights as August Wilson.

Ballet/Dance

The 1982 survey respondents were asked about participation in ballet, excluding such other dance forms as modern, jazz, Eastern, and so forth. This was partially rectified in the 1992 survey, when a question regarding live participation in dance, broadly defined, was added. Unfortunately, that means that while live ballet participation can be compared over time, media participation cannot be strictly compared over time, nor can media participation be strictly compared with live participation for 1992. Nevertheless, some generalizations may be possible.

In both years, participation rises with education and income, as shown in Table 28. Live participation is slightly higher within the two younger age groups, while participation by television tends to peak in the middle-age group.

Over the decade, overall ballet participation rose slightly, and participation within most individual groupings rose as well. Not surprisingly, participation in dance, more broadly defined, was higher than participation in just ballet in 1992. The only anomaly was in the highest income grouping, where ballet participation exceeded dance participation. Interestingly, nonwhite live participation in dance exceeds white participation in 1992, suggesting that the broader category captures ethnic exposure that is obscured by a focus on ballet. Media participation rates in dance in 1992 are very similar across the racial groupings depicted. Dance Theater of Harlem and the Alvin Ailey Company are among the best-known examples of primarily black performing groups, and other black choreographers, such as Bill T. Jones, have become very popular. One would presume that these companies and artists have found an audience.

TABLE 28. Ballet/Dance Participation Rates by Variable, 1982 and 1992 (Percentages of Adult Population)

	Live			Television[a]	
Variable	**1982 Ballet**	**1992 Ballet**	**1992 Dance**	**1982**	**1992**
Total	4.2	4.6	7.1	16.3	17.2
Location					
Urban	4.9	5.4	7.6	17.7	18.5
Rural	2.6	2.6	5.9	13.1	13.7
Gender					
Male	2.7	3.6	6.7	12.1	14.8
Female	5.6	5.6	7.5	20.1	19.4
Education					
Elementary	0.4	0.7	2.5	7.6	11.0
High school	2.0	2.0	4.3	11.6	13.1
College	8.4	8.1	10.9	25.4	22.8
Age					
Young adult	4.1	4.9	7.3	12.7	12.6
30-something	5.7	5.0	7.8	17.3	16.5
Middle age	3.7	4.9	7.2	19.8	20.3
Retired	2.5	3.2	5.4	15.4	20.3
Race					
White	4.5	4.9	7.0	16.8	17.2
Black	1.8	2.6	7.3	10.3	16.5
Other	3.4	5.8	9.9	26.3	18.8
Income[b]					
Poverty	2.2	2.6	4.6	10.8	14.2
Low	3.5	2.5	6.3	15.3	17.0
Moderate	5.9	5.5	8.2	21.4	17.3
High	10.7	12.3	9.5	28.8	25.0

[a]Data are not strictly comparable over time.
[b]Groupings are not comparable between periods.

FIGURE 16. Ballet/Dance Participation Rates by Age, 1982 and 1992 (Percent)

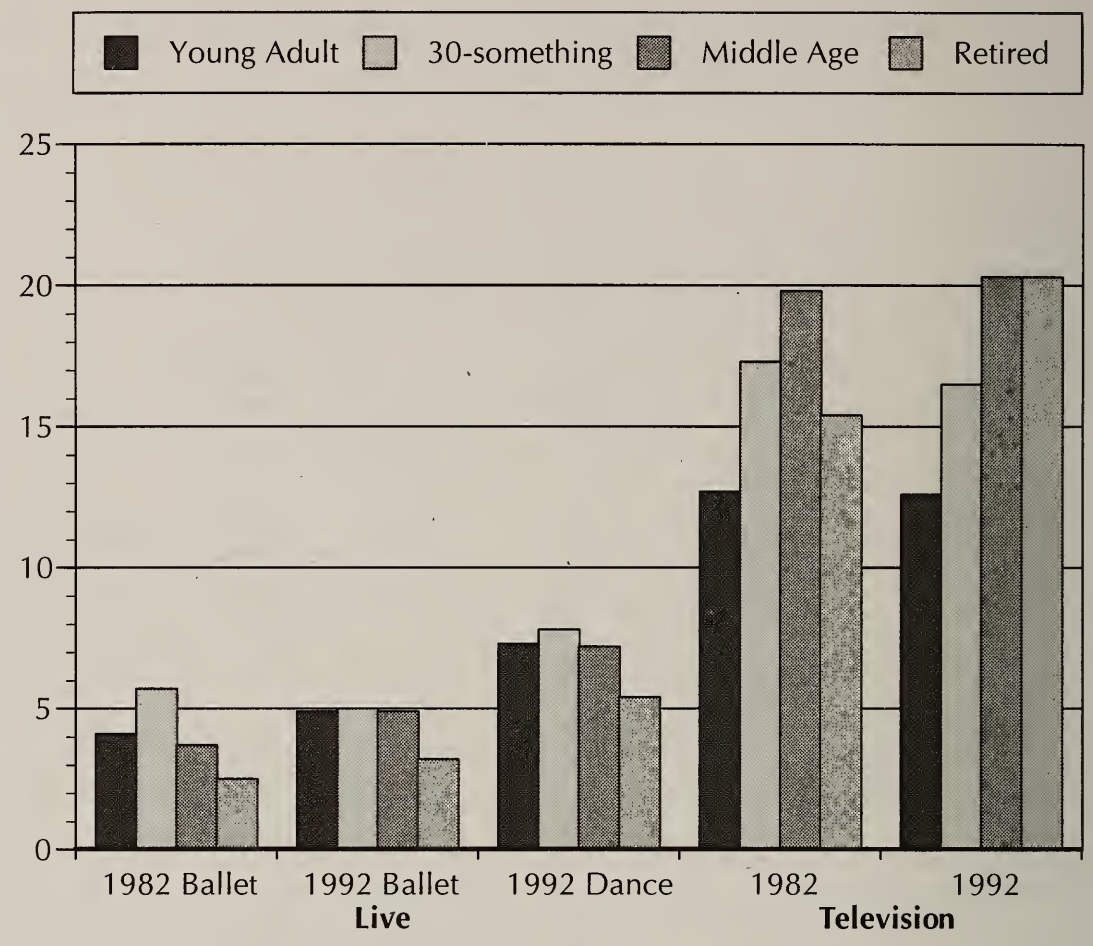

TABLE 29. Change in Ballet/Dance Participation Rates by Age, 1982–1992[a]

Age Group	Live		Television[a] (Ballet/Dance)
	Ballet Only	Ballet/Dance[a]	
Young adult	0.8	3.2	–0.1
30-something	–0.7	2.1	–0.8
Middle age	1.2	3.5	0.5
Retired	0.7	2.9	4.9

Note: Numbers indicate increase or decrease in percentage points.
[a]Data are not strictly comparable over time.

FIGURE 17. Ballet/Dance Participation Rates by Education, 1982 and 1992 (Percent)

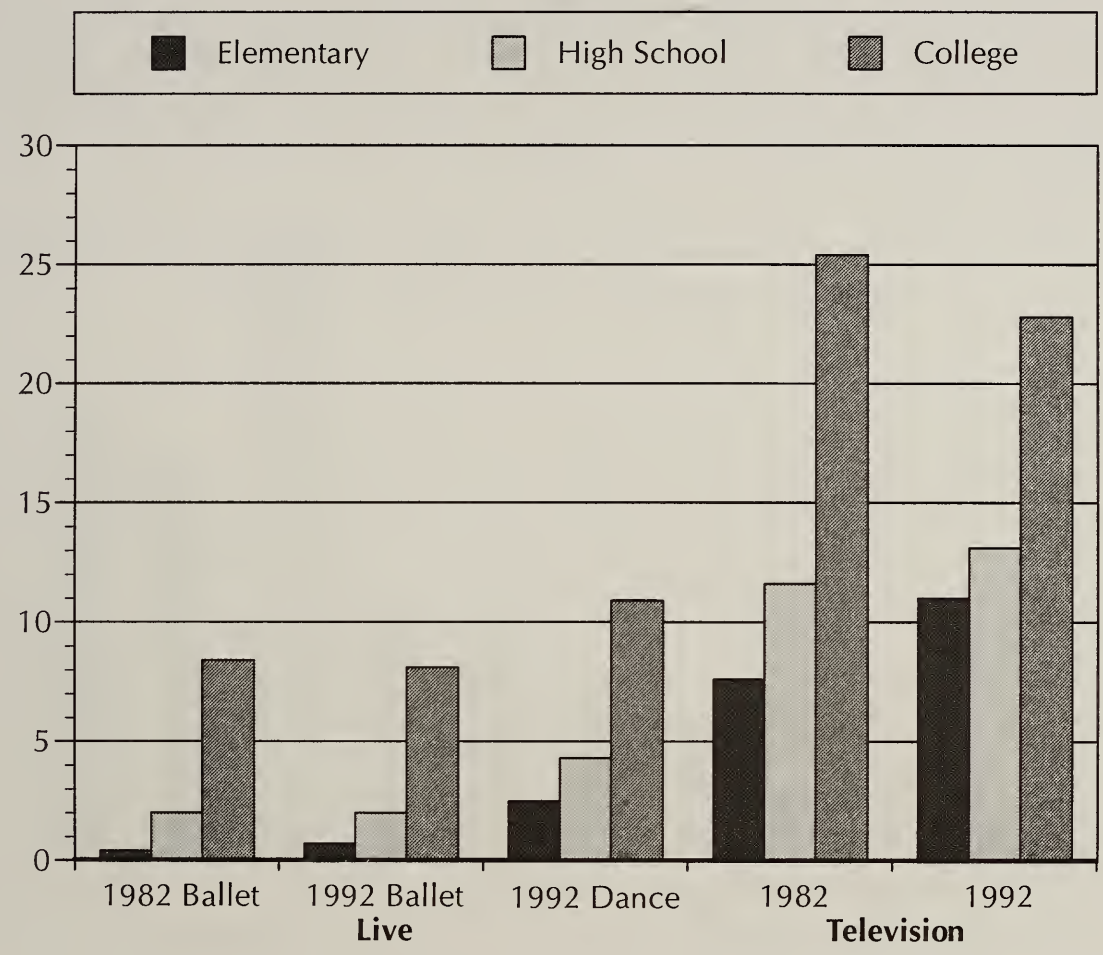

Table 30. Change in Ballet/Dance Participation Rates by Education, 1982–1992[a]

Education[b]	Live		Television[a] (Dance Only)
	Ballet	Dance[a]	
Elementary	0.3	2.1	3.4
High school	0.0	2.3	1.5
College	–0.3	2.5	–2.6

Note: Numbers indicate increase or decrease in percentage points.
[a]Data are not strictly comparable over time.
[b]"None" is not included.

FIGURE 18. Ballet/Dance Participation Rates by Race, 1982 and 1992 (Percent)

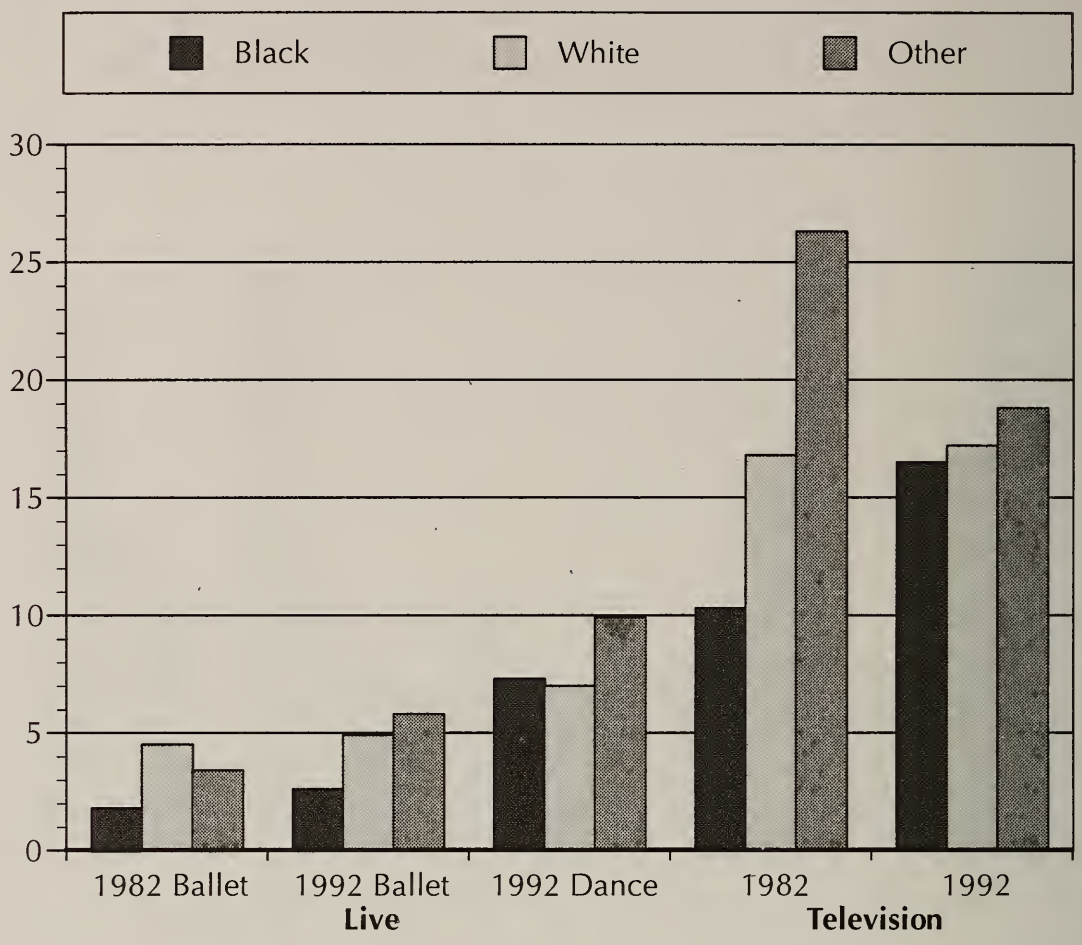

TABLE 31. Change in Ballet/Dance Participation Rates by Race, 1982–1992

Race	Live		Television[a] (Ballet/Dance)
	Ballet Only	Ballet/Dance[a]	
White	0.4	2.5	0.4
Black	0.8	5.5	6.2
Other	2.4	6.5	–7.5

Note: Numbers indicate increase or decrease in percentage points.
[a]Data are not strictly comparable over time.

Art

In contrast to the preceding performing arts data and discussion, both attendance at art museums and participation via television (watching programs about art, artists, or art museums and galleries) have risen over time for virtually every demographic category (see Table 32). Participation rates are high and getting higher. Even male and female participation rates are nearly on a par.

TABLE 32. Art Participation Rates by Variable, 1982 and 1992 (Percentages of Adult Population)

	Live		Television	
Variable	**1982**	**1992**	**1982**	**1992**
Total	22.1	26.7	22.8	30.1
Location				
Urban	24.6	29.8	24.7	31.2
Rural	16.8	18.5	18.4	27.3
Gender				
Male	21.0	26.4	23.1	30.1
Female	23.1	26.9	22.6	30.1
Education				
Elementary	2.5	3.8	4.6	13.3
High school	13.5	14.4	18.5	23.3
College	40.0	43.6	34.0	40.2
Age				
Young adult	24.3	29.1	22.0	26.8
30-something	26.9	29.6	24.5	31.7
Middle age	20.4	27.3	25.7	34.0
Retired	12.3	16.3	16.5	25.1
Race				
White	23.2	27.6	23.2	31.3
Black	12.3	19.0	19.4	23.3
Other	27.5	28.4	24.6	21.5
Income[a]				
Poverty	12.8	13.4	14.4	21.8
Low	19.6	20.6	20.9	27.4
Moderate	30.7	31.6	32.8	33.0
High	47.2	49.8	42.9	44.1

[a]Groupings not comparable between periods

FIGURE 19. Art Participation Rates by Age, 1982 and 1992 (Percent)

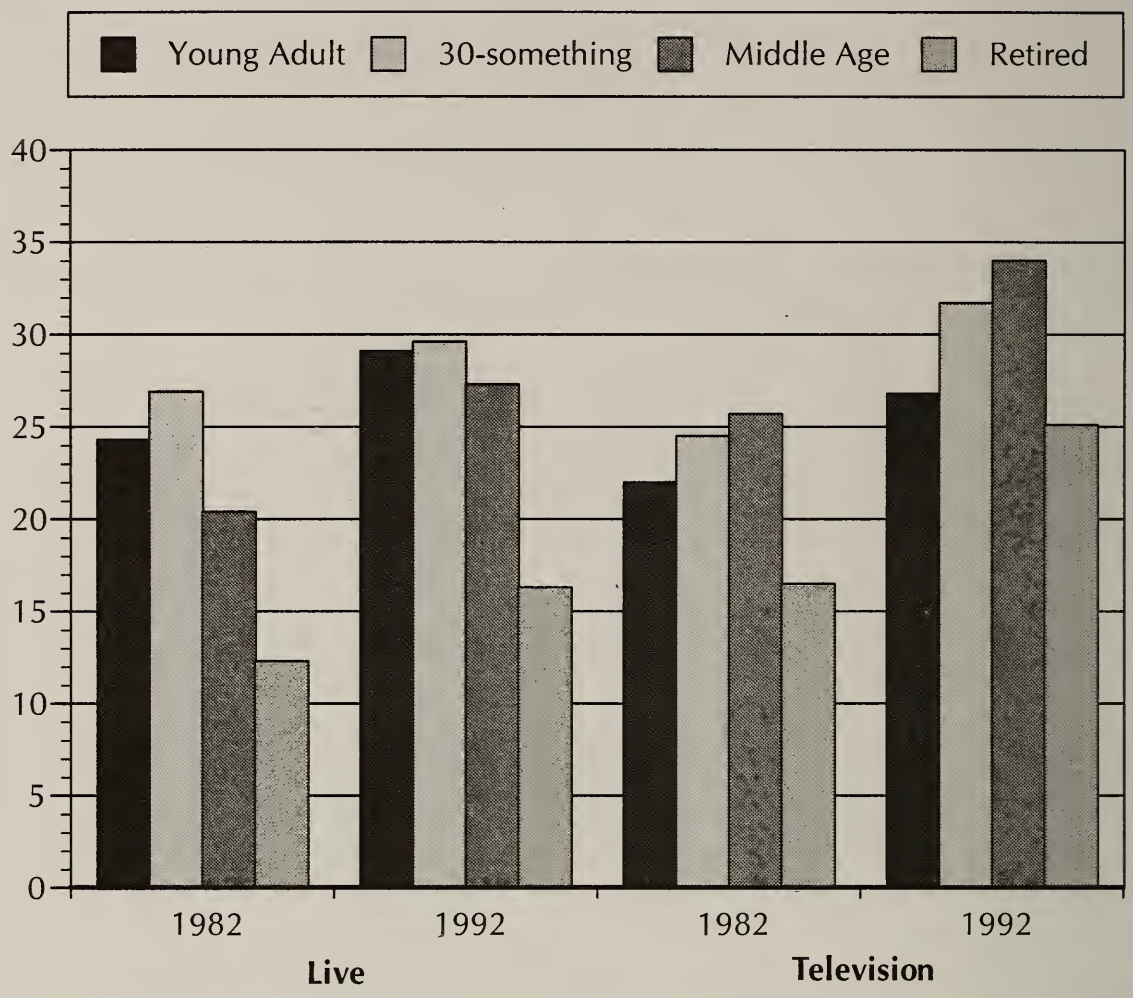

TABLE 33. Change in Art Participation Rates by Age, 1982–1992

Age Group	Live	Television
Young adult	4.8	4.8
30-something	2.7	7.2
Middle age	6.9	8.3
Retired	4.0	8.6

Note: Numbers indicate increase in percentage points.

FIGURE 20. Art Participation Rates by Education, 1982 and 1992 (Percent)

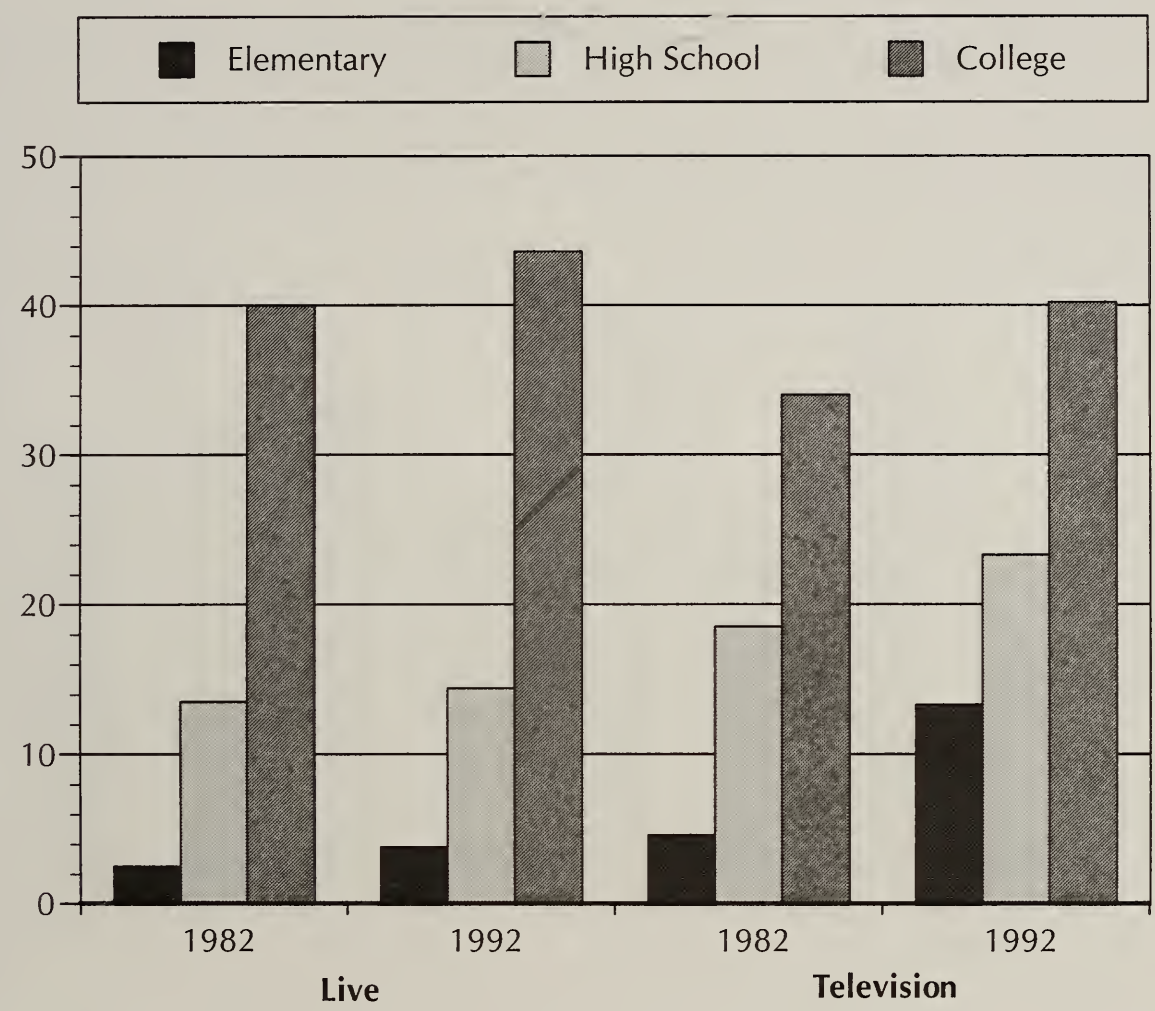

TABLE 34. Change in Art Participation Rates by Education, 1982–1992

Education[a]	Live	Television
Elementary	1.3	8.7
High school	0.9	4.8
College	3.6	6.2

Note: Numbers indicate increase in percentage points.
[a]"None" is not included.

FIGURE 21. Art Participation Rates by Race, 1982 and 1992 (Percent)

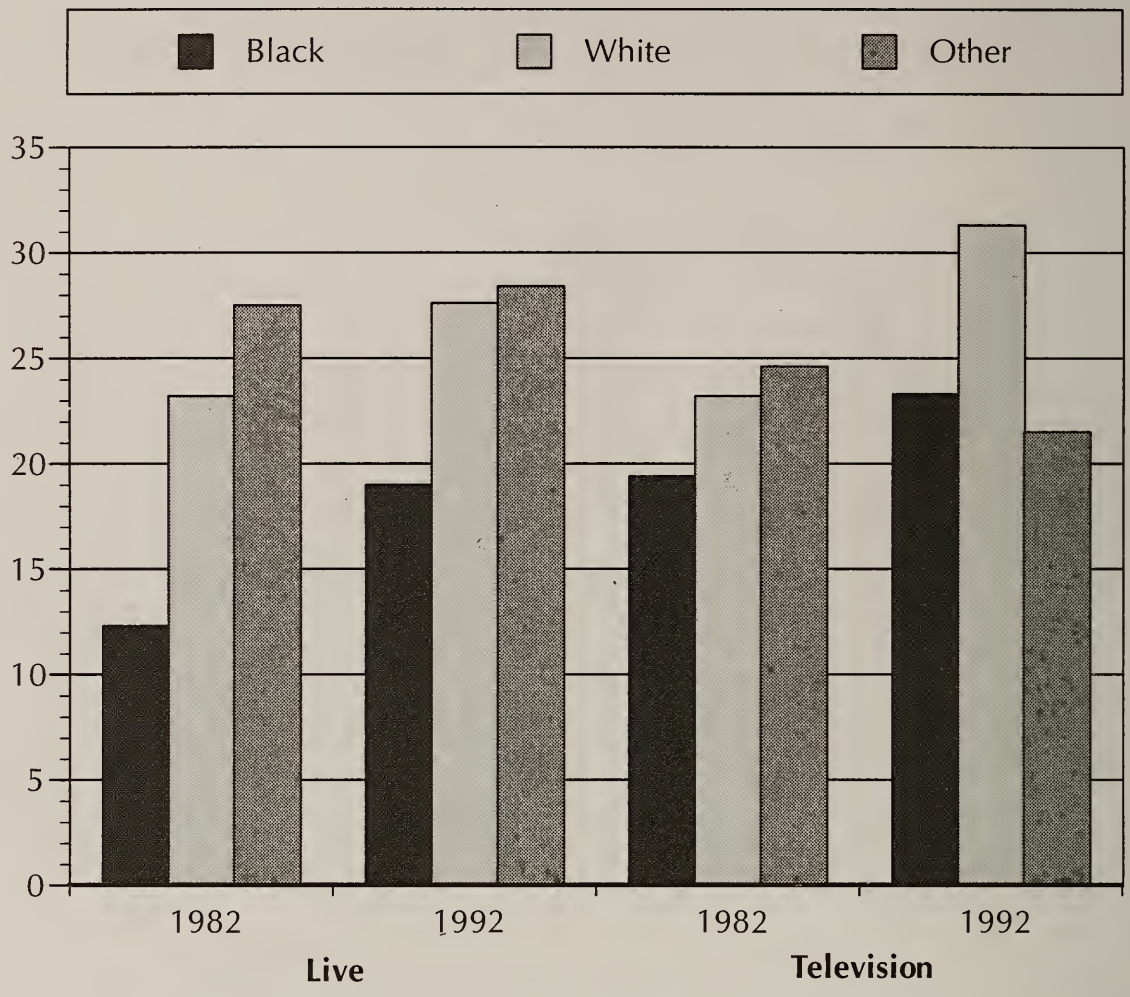

TABLE 35. Change in Art Participation Rates by Race, 1982–1992

Race	Live	Television
White	4.4	8.1
Black	6.7	3.9
Other	0.9	–3.1

Note: Numbers indicate increase or decrease in percentage points.

Participation rates rise with education and income, while participation by age peaks in the 30-something to middle-age range.

Summary and Conclusions

The findings in this chapter lend credence to a number of conclusions. Participation in all art forms and media tend to rise with income, education, and age. Media participation rates, although subject to the same general influences, are by and large higher than live attendance rates, probably reflecting the lower costs of participating from, say, one's living room. Except for jazz, female and white participation rates exceed the alternatives, while urban participation uniformly exceeds rural.

The measures of association, which suggest that observed relationships are not simply random, leave some questions unanswered. It is not clear, for example, whether the high association between education and participation is due to well-developed tastes for art and culture, or due to the higher incomes—and ability to pay—of those with higher educations. Part III resolves this difficulty.

Multivariate Statistical Results

PART III

Among the questions posed—and answered—in this part are the following:

- What is the impact of any one variable on arts participation via media, controlling for all other influences? As indicated in the last chapter, failure to control for possible simultaneous influences could lead to erroneous inferences.
- Do multivariate methods further indicate that patterns of participation via media differ significantly from those for live participation?
- Have multivariate results altered significantly from 1982 to 1992?

Multivariate statistical techniques are most appropriate to address questions such as these. Such techniques generate estimates of the parameters, or relationships, among a number of variables simultaneously.[13] The specific technique used here is *logistic regression,* which deals with *categorical response variables.*[14] An example of a categorical response variable is gender, where a respondent can be either male or female, i.e., fall into one category or the other. This contrasts with more nearly continuous variables, such as household income, which can range in value from zero to millions of dollars or higher. But even these latter can be grouped into categories for statistical purposes, as has been done in this document. Statistical results, literal interpretations, and inferences are indicated in the sections that follow. For a more technical discussion of the techniques, including indicators of statistical significance, see Appendix B.

The estimating equation for multiple regression takes the general form

$$P_i = f(P_j; G; D)$$

where P_i is the live (media) participation measure for activity i (opera, for example); P_j is the participation measure for a corresponding media (live) activity j; G is a geographic identifier (e.g., urban); and D is a vector of demographic characteristics, including those of particular interest for this project (income, education, etc.). A positive sign for the estimated coefficient of P_j indicates complementarity, while a negative sign would indicate the two are substitutes.[15]

Separate regressions for each of the survey periods will support further

analyses of changes over time.[16] A review of general patterns will offer some indications as to whether participation patterns have altered over time.

Logistic Models

Logistic regression estimates the probability of an event occurring, for example, of an individual attending a live performance or participating via some media form. The logistic model can be written in terms of the "log of the odds," which is called a *logit:*

$$\log\left(\frac{Prob(event)}{Prob(no\ event)}\right) = B_0 + B_1X_1 + \ldots + B_nX_n$$

An equivalent expression is

$$Prob\ (event) = \frac{1}{1 + e^{-(B_0 + B_1X_1 \ldots)}}$$

which we can use to construct an illustrative example. Borrowing some values from the third column of Table 37, we seek to determine the probability that a 30-something black male with moderate income and a high school education would view jazz on television in the survey period. The calculation is

$$Prob\ (jazz\ on\ TV) = \frac{1}{1 + e^{-(-3.5851 + .4623(1) + .1407(1) + .3419(1) + 1.1449(1) - .1172(1) + .8830(1))}} = .3253$$

which means that there is about a one-third, or one out of three, chance that the person described above would have watched jazz on television during the survey period. In contrast, the corresponding probability for an otherwise similar white respondent is slightly less than 25 percent.

A positive value of B_i increases the log of the odds, while a negative value decreases the log of the odds. Put less precisely but more simply, a positive coefficient indicates that the variable increases the probability of participation, while a negative coefficient decreases the probability. Furthermore, as the absolute value of a coefficient increases, the impact of that variable likewise increases. For example, a higher value of the coefficient of one age group indicator relative to another indicates that someone in the first age group is more likely to participate.

Overall Logistic Regression Results

Table 36 lists and briefly defines the variables included in the logistic regressions—those variables that may influence consumer tastes or consumer willingness to pay with respect to each of the benchmark arts. Such variables include demographic descriptors of respondents as well as characteristics of their locations. Gender, race, and education levels are among the variables that may be taken to indicate tastes, while income reflects both tastes and the ability to pay for arts participation.[17] The third column in Table 36, "Reference," simply

TABLE 36. Variables, Definitions, and References

Variable	Brief Description	Reference
Urban	Resides in urban area	Not urban
Male	Self-explanatory	Female
Low income	Household income range just above poverty	Poverty income
Moderate income	Household income range below the highest	Poverty income
High income	Household income over $75,000 (1982) or $100,000 (1992)	Poverty income
High school	Between 9 and 12 years of education	Elementary
College	More than 12 years of education	Elementary
30-something	Age between 30 and 44	Young adult (18–29)
Middle age	Age between 45 and 64	Young adult
Retired	Age 65 or greater	Young adult
Black	Self-explanatory	White
Asian	All Asian	White
Indian	American Indian, Eskimo, or Aleut	White
Hispanic	Of Hispanic origin	Not Hispanic
Live	Participant via live performance of art form in question	Not live
Television	Participant via television in art form in question	Not television participant
Radio	Participant via radio in art form in question	Not radio participant
Recording	Participant via audio recording in art form in question	Not recording participant

identifies the variable category against which the categories in the first column are compared to determine the coefficients.

One might assume, further informed by the results reported in Part II, the following: urban respondents would be more likely to take advantage of live participation simply because of the greater likelihood of availability; those with higher education levels may have developed tastes more consistent with complex preferences; older respondents would have more time to develop complex tastes (or to move from less complex to more complex music). The expected impact of race would for the most part be less clear, although African Americans may display a disproportionate interest in jazz, traditionally a black art form. Ordinarily, individuals with higher income levels would participate more because of ability to pay; certainly this might be especially true in the case of live performances or purchase of recordings, both of which entail an explicit price or user charge. But both television (broadcast as well as many cable) and radio are known as "collective goods," wherein after some initial outlay (purchase of a receiving set, installation of cable access), subsequent viewing entails no explicit user charge. In these instances, income may not be quite so important a determinant. With those not too unreasonable expectations, we move to the statistical results.

Significance of individual coefficients is based on the *Wald statistic,* which permits a test of whether a coefficient is 0, i.e., has no influence.[18] If the test is significant at, say, the 5 percent level, this means that there is only a 5 percent chance of the observed outcome occurring randomly. Put another way, there is a 95 percent chance of a nonrandom relationship between the variables.

Several tests or indicators of overall significance of models as specified are reported in the following tables.[19] These include the likelihood test *(–2 log likelihood),* which tests how well the model classifies the data in comparison to a "perfect" model. A model that classifies especially well would be described as not significantly different from the perfect model. As it happens, all of the results reported here *do* differ significantly from the perfect model. This means that many factors other than those accounted for in this study influence arts participation.

A second test, the *model chi-square,* indicates whether the included variables as a group are significantly different from zero. Without exception, this test indicates that the included variables are significant. Finally, the third indicator, *classification percentage,* reveals the overall classification accuracy of the models. A value of 83.6, for example, means that 83.6 percent of the respondents are correctly classified as participants or nonparticipants by the model. The values for this indicator for most of the models reported here are generally in the 80s and 90s.

Jazz

Tables 37 and 38 contain the results of logistic regressions for live and media participation in jazz for 1982 and 1992, respectively. As indicated by the summary statistics, the overall influence of the included variables is statistically significant.

TABLE 37. Logistic Regression, Jazz Participation, 1982

Independent Variable	Live	Television	Radio	Recording
Urban	.4576***	.4623**	.4563***	.6214***
Male	.0224	.1407	.2854***	.0289
Low income	– .0894	.2511*	– .1413	.3373***
Moderate income	.0908	.3419**	– .1559	.4715***
High income	.4871***	.4562**	– .1129	.7456***
High school	1.0946***,[a]	1.1449***	.8926***	1.1475***
College	2.1159***,[a]	1.7933***,[a]	1.5900***	1.9566***
30-something	– .6907***,[a]	– .1172	– .4750***,[a]	– .4961***,[a]
Middle age	–1.0330***,[a]	.0518[a]	– .5473***,[a]	– .4811***
Retired	–1.8895***,[a]	– .4462***	–1.3526***,[a]	–1.2431***,[a]
Black	.7179***	.8830***	1.2195***	1.2675***,[a]
Indian	– .15301***	.2177	.2814	– .2216
Constant	–3.6688***	–3.5851***	–2.8000***	–3.4061***
–2 Log likelihood	8706.671[b]	3158.659[b]	3041.379[b]	3173.020[b]
Model chi-square	1134.959***	215.488***	323.466***	405.486***
Classification percentage	90.51	82.74	83.03	80.88

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from 1992 coefficient at 5 percent level
[b]Significantly different from the "perfect" model

Live Participation

Several factors stand out in the equations for live attendance. The first is that an urban location enhances the likelihood of attendance, in part surely due to convenience. Urban areas are simply more likely to offer opportunities for live attendance. Men are more likely to participate than women, and this tendency became more pronounced in 1992. Income, as measured here, seems to be a significant factor; each of the included groups participate significantly more than the reference (poverty level) group. This is especially true in 1992,

TABLE 38. Logistic Regression, Jazz Participation, 1992

Independent Variable	Live	Television	Radio	Recording
Urban	.4569***	.3552***	.4165***	.4611***
Male	.1278**	.1478***	.1748***	.1490***
Low income	.3718***	.2782***	.2346***	.3445***
Moderate income	.4791***	.2298***,b	.3615***	.5386***
High income	.8732***	.4892***,b	.7131***	1.0112***
High school	1.5803***,a	.7304***	.6453***,b	.8146***
College	2.8647***,a	1.5432***,a,b	1.5518***,b	1.8546***,b
30-something	– .1529*,a	.3343***,b	.1379**,a,b	– .0302a,b
Middle age	– .4083***,a	.4290***,a,b	– .1507**,a,b	– .3084***
Retired	– .8181***,a	.4231***,a,b	– .4484***,a,b	– .6617***,a
Black	.6677***	.8035***	.9604***,b	.9787***,a,b
Asian	– .8751***	– .2665b	– .1982b	– .4839***
Indian	– .0628	.0694	– .1917	.1783
Hispanic	– .4710***	.0306b	.1042b	– .1335b
Constant	–5.0870***	–3.5984***	–2.7788***	–3.5469***
–2 Log likelihood	6784.577c	10211.246c	12351.924c	10095.600c
Model chi-square	844.977***	601.602***	1199.478***	1233.858***
Classification percentage	89.72	82.13	73.02	80.37

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from 1992 coefficient at 5 percent level
[b]Significantly different from corresponding "live" coefficient at 5 percent level
[c]Significantly different from the "perfect" model

but this may be an artifact of the income groups chosen for the various categories. The likelihood of attendance increases with education; both the high school and college groups are more likely to attend than those in the reference (elementary) group, with the college coefficient larger than the high school coefficient. The education coefficients rose significantly from 1982 to 1992, suggesting education's increased importance as a factor in attendance at jazz concerts.

Attendance at jazz performances also seems to be a young person's entertainment. Attendance is less likely among those in older age groups, with the negative coefficient progressively rising from the 30-somethings to the retirees. Interestingly, age declined in importance, as indicated by size of coefficient, from 1982 to 1992. Race indicators are mixed; black respondents participate significantly more than whites; Asians participate significantly less; and Hispanics participate less than non-Hispanics, the majority of whom are white.

Television

Participation in jazz via television is also higher in urban areas than in rural areas; gender, not significant in 1982, is significant a decade later; and higher incomes increase participation. In 1992, the income coefficients for television participation are much lower than for live participation, indicating that higher incomes are more likely to influence attendance at a performance than they are to influence television viewing of jazz. Another rather stark contrast is the positive and significant impact of higher age on television participation in 1992. One might suppose on this basis that the taste for jazz rises with age, but that this is in part offset by the reduced willingness to travel to live venues. The results also support the prior finding that modes of participation are complements as opposed to substitutes. Black respondents are more likely to participate via television than are whites, but other racial categories are insignificant.

Radio

Participation via radio reflects some similar influences: urban residents are more likely to listen to jazz than are nonurban residents; males are more likely to listen than are females. The role of income on participation via radio is insignificant in 1982, but participation clearly rises with income level in 1992. Education contributes strongly to participation in both time periods. The age measures show a mixed pattern; participation declines with age in 1982 but does so only for the two older groups in 1992. The 30-somethings are slightly more likely to participate than the young adults in the latter period.

Recordings

Although jazz recordings are ubiquitously available—that is, not limited to urban areas—urban respondents are more likely than nonurban respondents to participate via this means. High-income groups are more likely to participate by this means as well, reflecting the fact that recordings are not a collective good. Participation also generally rises with education but decreases with age, similar to the trends for live participation. Black respondents are more likely than whites to participate via recordings, while other race variables show a mixed response.

Jazz Summary

The results for jazz participation are generally consistent with earlier findings. Participation is higher for younger, black, urban males with higher incomes and education than for other groups. Income is not so important for the collective goods (television and radio) as for the more nearly private goods (recordings).

Classical Music

Tables 39 and 40 show the logistic regression results for classical music participation. As indicated by the summary statistics, the set of included variables is significant in both time periods.

Live Participation

Attendance at live classical music performances is higher in urban areas and among females. It rises with income, education, and age, and is generally lower for nonwhites. The urban and male coefficients have declined in absolute value over time, as have the education measures. The age coefficients have risen in absolute value, however, indicating an aging of the audience for live performances.

TABLE 39. Logistic Regression, Classical Music Participation, 1982

Independent Variable	Live	Television	Radio	Recording
Urban	.4643***,[a]	.3973***	.3619***	.1806*
Male	– .5046***,[a]	– .2592***	– .0952	– .2559***
Low income	– .0345	.4604***	.1037	.2267**
Moderate income	.2528***	.4584***	.2409*	.2829**
High income	.7160***	.8977***	.6429***	.4345**
High school	1.4159***	.8842***	.4059**	.8024***
College	2.9238***,[a]	1.8330***	1.6040***	2.1356***
30-something	.3045***,[a]	.3819***	.4624***	.3201***,[a]
Middle age	.4371***	1.1195***	.6633***	.6046***,[a]
Retired	.4976***	.9576***,[a]	.4449***	.1168
Black	– .5752***	– .3212**	– .1419,[a]	– .4815***
Indian	– .7764***	.2825	.2186	.1494
Constant	–4.4824***	–3.4511***	–3.1031***	–3.1406***
–2 Log likelihood	10596.901[b]	3744.989[b]	3298.713[b]	3400.933[b]
Model chi-square	1619.738***	379.726***	299.813***	392.946***
Classification percentage	86.91	75.87	80.51	78.67

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1992 coefficient at 5 percent level
[b]Significantly different from the "perfect" model

TABLE 40. Logistic Regression, Classical Music Participation, 1992

Independent Variable	Live	Television	Radio	Recording
Urban	.2971***,[a]	.2810***	.2500***	.2403***
Male	– .3224***,[a]	– .2105***	– .1316***,[b]	– .1904***,[b]
Low income	.3312***	.2462***	.0896	.2387***
Moderate income	.5969***	.3496***,[b]	.3104***,[b]	.5637***
High income	1.0581***	.7460***,[b]	.7073***,[b]	1.0005***
High school	1.0906***	.8481***	.6299***	.8935***
College	2.4932***,[a]	1.6813***,[b]	1.7815***,[b]	2.1262***
30-something	.0711[a]	.3541***,[b]	.3784***,[b]	.0674[a]
Middle age	.5792***	.8815***,[b]	.6507***	.2171***,[a,b]
Retired	.6897***	1.3195***,[a,b]	.5091***	.1599**,[b]
Black	– .5042***	– .1816**,[b]	– .5413***,[a]	– .7512***
Asian	– .1443	.2017	.0577-	.0289
Indian	– .1252	.5377*	.2599	– .1578
Hispanic	– .4664***	.0031[b]	– .03623[,b]	– .1618
Constant	–4.6564***	–3.5044***	–2.6868***	–3.2770***
–2 Log likelihood	7711.036[c]	11351.607[c]	12877.276[c]	10871.908***
Model chi-square	1019.939***	893.472***	1368.775***	1357.308***
Classification percentage	87.39	77.50	70.52	76.33

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1982 coefficient at 5 percent level
[b]Significantly different from corresponding "live" coefficient at 5 percent level
[c]Significantly different from the "perfect" model

Television

Television participation patterns are generally similar to those for live participation. The urban coefficient is lower in both time periods than in the corresponding equations for live participation (and falls from 1982 to 1992), reflecting the fact that television signals are not restricted to urban areas. Men are not so unlikely to watch classical music on television as they are to attend a live performance. The income variables are not so influential as compared with live participation in 1992, reflecting the public-goods nature of television. Age patterns are similar across periods except for the retired group, where a significantly higher value in 1992 may reflect an aging audience.

Radio

Participation by radio is quite similar to participation by television. Income coefficients are lower than those in corresponding equations for live and television participation, a result consistent with lower user costs of radio. Urban residence, while significant in both periods, has become less important over time, although the difference is not significant. Radio participation peaks in the middle-age group. Black participation relative to white fell over the decade, suggesting that this art form is not addressing the tastes of blacks via this medium.

Recordings

Participation in classical music via recordings shows familiar patterns, with the likely participant being urban, female, higher income, better educated, white, and somewhat older—except for the retired group. Few significant changes have occurred over time, the exceptions being smaller age coefficients.

Classical Music Summary

Overall, the urban and gender factors have diminished over the period from 1982 to 1992. Attendance at live performances increases with income, education, and age; participation via television, radio, and recordings shows generally similar patterns. Of special note is the relatively small negative constant term for the 1992 radio equation. This means that the base level of participation in classical music via radio is higher than in 1982 and is also higher than live and other media participation rates.

Opera

Tables 41 and 42 contain the logistic regression results for opera.

Live Participation

With the exception of the urban coefficient, which fell by half from 1982 to 1992, opera participation patterns are generally stable over time. Males do not participate as much as females; participation rises with income, education, and age; and nonwhites do not participate as much as whites. The lower urban coefficient in 1992 suggests that an urban setting is not so powerful in affecting relative participation as it once was.

TABLE 41. Logistic Regression, Opera Participation, 1982

Independent Variable	Live	Television	Radio	Recording
Urban	.8199***,[a]	.5297***	.3452**	.5273***
Male	– .4112***	– .3002***	– .0110	– .1810
Low income	– .0448	.4595***	.1242	.4381**
Moderate income	.2946*	.5560***	.1482	.4137*
High income	1.0805***	.7678***	.5067*	.5005
High school	1.1090***	1.0070***	.1440	.6265**
College	2.4182***	1.8099***	1.3479***	1.6312***
30-something	.2861**	.6698***	.2109	.8986***,[a]
Middle age	.6486***	1.4242***	.9901***	1.5850***,[a]
Retired	.8679***	1.4908***	.9451***,[a]	1.2958***
Black	– .6815***	– .1275	– .2651	– .3314
Indian	– .6340*	.5532*	.5493	.1399
Constant	–6.2451***	–4.8419***	–4.2640***	–5.2711***
–2 Log likelihood	3745.317[b]	2494.523[b]	1675.963[b]	1727.608[b]
Model chi-square	430.128***	247.983***	125.651***	159.043***
Classification percentage	97.05	87.62	93.25	92.84

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1992 coefficient at 5 percent level
[b]Significantly different from the "perfect" model

Television

Participation in opera via television is, by and large, similar to live participation. The age coefficients for television are significantly higher than those for live participation. This indicates that, controlling for the other influences, older groups are much more active participants than the young adults, whose television tastes may run in other directions. Television participation does not change significantly over time.

Radio

The major distinction in opera participation via radio is that the income variables are not so significant, reflecting perhaps the greater relative accessibility of radio broadcasting. The age coefficients are higher than those for live attendance, indicating that young adults likely have alternative radio listening habits.

TABLE 42. Logistic Regression, Opera Participation, 1992

Independent Variable	Live	Television	Radio	Recording
Urban	.4093***,[a]	.3744***	.2144**	.2558***
Male	– .2195**	– .1998***	– .1415**	– .2315***
Low income	.0283	.0924	– .0028	.2105*
Moderate income	.3441*	.2080**	.2986***	.6083***
High income	1.3420***	.3800***,[b]	.6434***,[b]	1.0155***
High school	.6250	.7228***	.6804***	.6558**
College	1.8462***	1.6444***	1.7754***	1.7693***
30-something	.1067	.4603***	.6052***,[b]	.2905**,[a]
Middle age	.5217***	1.1165***,[b]	1.3589***,[b]	.8990***,[a,b]
Retired	.6598***	1.4182***,[b]	1.6100***,[a,b]	.9703***
Black	– .5346**	.0599[b]	– .1999	– .5127***
Asian	.3332	.0002	– .3013[b]	.2734
Indian	.2954	.7045*	.0210	– .3933
Hispanic	– .2668	.3448***,[b]	.1417	.0983
Constant	–5.5861***	–4.4598***	–4.8690***	–4.9717***
–2 Log likelihood	3064.574[c]	7402.027[c]	6256.631[c]	5205.818***
Model chi-square	315.855***	521.259***	589.950***	469.359***
Classification percentage	96.65	89.09	91.18	93.00

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1982 coefficient at 5 percent level
[b]Significantly different from corresponding "live" coefficient at 5 percent level
[c]Significantly different from the "perfect" model

Recordings

The higher user cost of recordings accounts for the higher coefficient values for the income variables, compared with other media alternatives. Otherwise, participation patterns as reflected in coefficient signs and magnitudes are similar to those for other forms of opera participation. The 30-something and middle-age coefficients are significantly smaller in 1992, indicating a reduced influence of aging relative to the young adults.

Opera Summary

Opera participation patterns are very similar to those for classical music. Participation rises with age, income, and education for both live and media alternatives. The urban coefficients fell from 1982 to 1992, suggesting that proximity may have declined in importance over the decade. Income is not so

important for the broadcast (television and radio) media as it is for live and recorded media.

Musicals

Tables 43 and 44 display the results of the logistic regressions for musical participation.

Live Participation

Attendance at musicals is higher in urban areas and among females. Attendance also rises with income, education, and age up to the retired years, when it falls off a bit. One major distinction between 1982 and 1992 is that in 1992 blacks are less likely to stay away compared with whites.

TABLE 43. Logistic Regression, Musical Participation, 1982

Independent Variable	Live	Television	Radio	Recording
Urban	.5928***,[a]	.5941***,[a]	.5132**	.7276***
Male	– .4882***	– .2722***	.0633	– .5135***
Low income	.3745***	.4576***	.2311	.1731
Moderate income	.8308***	.6654***	.1757	.5564***
High income	1.3870***	.9291***	.8872**	.7904***
High school	.8800***	.5881***	1.0183**	.6911*
College	2.0884***	1.4188***	1.9627***	2.0047***
30-something	.1832***,[a]	.1019[a]	.0932	.3195*
Middle age	.3112***	.4846***,[a]	.7480***	.8087***
Retired	.1892**	.6165***,[a]	.7293**	.0067
Black	– .5642***,[a]	.0081	.2656	–1.3796***
Indian	– .9396***	– .1681	.7062*	– .6464
Constant	–3.7177***	–3.2848***	-5.6813***	–4.6338***
–2 Log likelihood	13172.162[b]	3464.157[b]	1130.026[b]	1847.202[b]
Model chi-square	1987.318***	244.974***	77.233***	259.908***
Classification percentage	81.37	79.37	96.09	91.58

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1992 coefficient at 5 percent level
[b]Significantly different from the "perfect" model

TABLE 44. Logistic Regression, Musical Participation, 1992

Independent Variable	Live	Television	Radio	Recording
Urban	.3355***,a	.2678***,a	.1805b	.5005***,b
Male	– .4570***	– .1832***,b	– .1513b	– .2693***,b
Low income	.4733***	.1715*,b	.0153b	.0446b
Moderate income	.8235***	.1943**,b	.0993b	.2728*,b
High income	1.5603***	.3258***,b	.3082b	.6438***,b
High school	.9202***	.6334***	.4395b	.2658b
College	1.8835***	1.3496***	1.5587***	1.6190***
30-something	– .0032a	.3853***,a,b	.4395**b	.1556b
Middle age	.3085***	.8722***,a,b	.9808***b	.4583***
Retired	.2206**	1.2461***,a,b	1.2471***b	.1966
Black	– .1238a	– .0318	– .1991	– .6784***,b
Asian	– .8654***	– .1198b	.5136*,b	.2115b
Indian	.1063	.9059***,b	.1791	– .0524
Hispanic	– .5397***	– .0526b	.4279**,b	– .1995b
Constant	–3.7749***	–3.7960***	–5.2673***	–4.5590***
–2 Log likelihood	9634.895c	8422.515c	3288.470c	4518.503c
Model chi-square	1108.812***	421.855***	182.875***	407.621***
Classification percentage	82.15	87.07	96.52	94.30

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1982 coefficient at 5 percent level
[b]Significantly different from corresponding "live" coefficient at 5 percent level
[c]Significantly different from the "perfect" model

Television

Of special interest in television participation for musicals are the smaller coefficients for income, compared with those for live participation, and the apparent aging of the audience, as indicated by the higher age coefficient for retired persons in 1992.

Radio

Radio participation offers no surprises beyond the result that male participation is not significantly different from female participation. Income is generally insignificant in both time periods, and black participation is not significantly different from white.

Recordings

Participation via recordings shows little change over time. In 1992, several coefficients—especially those for income—are quite different from those for live participation. This is a bit surprising, as both forms of participation entail explicit user charges.

Musical Summary

Overall, patterns of participation in musicals are familiar ones. The urban and male coefficients have declined over time. The base levels of participation via radio and recordings, as indicated by their large negative constants, were lower than those for live and television participation.

Theater (Plays)

Results of the logistic regressions for participation in theater are displayed in Tables 45 and 46.

Live Participation

Results for both 1982 and 1992 show patterns similar to those noted for the other benchmark arts—higher rates of participation among urban dwellers and females, and rates rising with increased income, education, and age, except for a slight drop among retired persons. A notable exception to the familiar pattern, however, occurs with black participation. In 1992 the rate of participation among blacks is not significantly different from that of whites. This perhaps reflects greater availability of drama that speaks to the black experience, including the works of such contemporary black playwrights as August Wilson, among others.

Television

The major divergence from the 1982 participation patterns in the case of theater on television is the 1992 results for age, where the coefficients are much higher than those for live participation. This likely reflects the continuing development over the decade of alternative viewing habits of young adults.

Radio

Income is not a significant influence on participation in drama via radio in either 1982 or 1992, but the influence of increased age is higher and significant

TABLE 45. Logistic Regression, Theater (Plays) Participation, 1982

Independent Variable	Live	Television	Radio
Urban	.4408***	.5247***	.5298**
Male	– .4199***	– .2156***	– .1241
Low income	.1206	.3667***	– .3207
Moderate income	.4980***	.5699***	– .2707
High income	1.1940***	1.1999***	–1.4546**
High school	1.2917***	.9908***	.8621*
College	2.7063***	1.9496***,[a]	1.7326***
30-something	.2120***,[a]	.0093[a]	– .3907*,[a]
Middle age	.3289***	.3643**,[a]	– .0746[a]
Retired	.2865***	.2648*,[a]	– .5899*,[a]
Black	– .5964***,[a]	– .2590*	– .3027[a]
Indian	– .8909***	– .4638	– .4995
Constant	–4.5275***	–3.1719***	–4.2419***
–2 Log likelihood	10049.071[b]	3818.382[b]	1178.053[b]
Model chi-square	1541.749***	380.843***	60.209***
Classification percentage	87.89	75.04	95.94

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1992 coefficient at 5 percent level
[b]Significantly different from the "perfect" model

in 1992. The 1992 rate of participation by blacks is significantly higher than that of whites.

Theater Summary

The theater results are all consistent with the stated hypotheses: participation generally is greater among females and urban dwellers, and in most cases it increases with income, education, and age. Age coefficients increased in value and became more generally significant between 1982 and 1992, suggesting a wider gap in behaviors between young adults and older groups. Also notable is the insignificant difference in rates of live participation by blacks and whites in 1992, and blacks' higher rate of participation via radio in that year.

TABLE 46. Logistic Regression, Theater (Plays) Participation, 1992

Independent Variable	Live	Television	Radio
Urban	.4254***	.3915***	.2336[b]
Male	– .3347***	– .1551***,[b]	.1462[b]
Low income	.2182***	.1058	– .2479[b]
Moderate income	.4590***	.3785***	– .1328[b]
High income	1.0827***	.5572***,[b]	– .1283[b]
High school	1.2816***	.7519***	.6565**,[b]
College	2.4997***	1.4245***,[a,b]	1.5099***,[b]
30-something	– .0477[a]	.4263***,[a,b]	.4818***,[a,b]
Middle age	.2803***	.9894***,[a,b]	.4824***,[a,b]
Retired	.2643***	1.2175***,[a,b]	.5598***,[a,b]
Black	– .0135[a]	– .0986	.4732***,[a,b]
Asian	– .9241***	– .3571*,[b]	.3412[b]
Indian	.4047	.2758	.3126
Hispanic	– .2849**	.1031[b]	.4784**,[b]
Constant	–4.4736***	–3.9266***	–5.2953***
–2 Log likelihood	8119.192[c]	9300.952[c]	2753.414[c]
Model chi-square	925.738***	570.747***	85.180***
Classification percentage	86.66	84.59	97.29

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1982 coefficient at 5 percent level
[b]Significantly different from corresponding "live" coefficient at 5 percent level
[c]Significantly different from the "perfect" model

Dance

Tables 47 and 48 show the results of the logistic regressions for ballet and dance. As stated earlier, the 1982 survey included questions pertaining only to ballet, while the 1992 survey added questions on dance more broadly defined. Furthermore, the 1992 media participation questions pertained only to dance. While this permits a comparison of live ballet attendance over time, neither dance over time nor media participation can be compared, because of differences in definitions.

Live Participation

Of special note is the generally insignificant impact of age on live attendance for both ballet in 1982 and dance in 1992, suggesting that older groups do not differ markedly from the young adult group in their attendance rates. Age was

TABLE 47. Logistic Regression, Ballet Participation, 1982

Independent Variable	Live	Television
Urban	.5359***	.3610***
Male	–1.0136***,[a]	– .7816***
Low income	.1403	.2897**
Moderate income	.3637***	.5012***
High income	.8291***	.5650**
High school	1.2474***	.4280**
College	2.6958***	1.4651***
30-something	.2876***,[a]	.3807***
Middle age	.0814	.7981***
Retired	.0813	.7977***
Black	– .7651***,[a]	– .3077
Indian	– .6083**	.3966
Constant	–5.4316***	–3.1942***
–2 Log Likelihood	4917.686[c]	3004.546[c]
Model chi-square	664.556***	276.695***
Classification percentage	95.69	83.46

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1992 coefficient at 5 percent level
[c]Significantly different from the "perfect" model

significant for live ballet in 1992, but the coefficients are small, indicating that impacts on probabilities are slight. Age was a significant determinant of media (television) participation in ballet in 1982 and 1992, peaking with the middle age group in the earlier year and with the retired group in the latter year.

By 1992, the negative coefficient of black participation in live ballet declined significantly, consistent with earlier observations regarding growing popularity of primarily black ballet companies. Also in 1992, participation by Indian respondents in live dance was significantly higher than that by whites, perhaps reflecting the existence of dance as an indigenous art form among Native Americans. This would not have been revealed by 1982 questions pertaining only to ballet.

Television

In contrast to live participation in dance forms, age is a significant determinant of television participation. Older respondents are considerably more likely to participate via television than are 30-somethings. Again, this may reflect the

TABLE 48. Logistic Regression, Dance Participation, 1992

Independent Variable	Live Ballet	Live Dance	Television
Urban	.4938***	.1786*	.2439***
Male	– .5709***,[a]	– .2142***	– .3708***
Low income	– .1680***	.2754**	.1494*
Moderate income	.3535***	.4004***	.1028[b]
High income	.9302***	.3574**	.3372***
High school	1.1300***	.4595**	.4880***
College	2.3871***	1.3781***	1.1758***
30-something	– .0052***,[a]	.0065	.2952***,[b]
Middle age	.0583***	.1004	.6908***,[b]
Retired	.0697***	.1060	.8359***,[b]
Black	– .1719***,[a]	.2039	.0724
Asian	–1.5828***	– .0346	.1270
Indian	– .6469***	1.3626***	.1207[b]
Hispanic	.0130***	.1919	.4507***
Constant	–3.9524***	–3.9524***	–2.9960***
–2 Log Likelihood	5.74E07[c]	5674.117[c]	10251.272[c]
Model chi-square	5.76E07***	237.472***	417.945***
Classification percentage	95.38	92.87	82.40

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1982 coefficient at 5 percent level
[b]Significantly different from corresponding "live" coefficient at 5 percent level
[b]Significantly different from the "perfect" model

differentiated viewing habits of young adults. In neither year was race a significant determinant of television participation in ballet and dance.

Art

Tables 49 and 50 contain the results of the logistic regressions for art participation in 1982 and 1992, respectively.

Live participation

From 1982 to 1992, coefficients of the education variables diminished in value. In both years, older age groups are less likely to participate than are young adults.

TABLE 49. Logistic Regression, Art Participation, 1982

Independent Variable	Live	Television
Urban	.4533***	.3240***
Male	– .3153***,[a]	– .0852
Low income	.1174*	.2123*
Moderate income	.3980***	.6451***
High income	.9513***	.9208***,[a]
High school	1.4741***,[a]	1.5315***,[a]
College	2.8006***,[a]	2.2505***
30-something	.0791	.0576
Middle age	– .0566	.3828***
Retired	– .1813**,[a]	.2899**
Black	– .6015***,[a]	.0733[a]
Indian	– .0837	– .0351
Constant	–3.6478***	–3.6384
–2 Log Likelihood	14320.459[b]	3657.835[b]
Model chi-square	2277.911***	297.159***
Classification percentage	78.01	76.80

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1992 coefficient at 5 percent level
[b]Significantly different from the "perfect" model

Television

As for live participation, coefficients of the education variables declined between 1982 and 1992. Male participation is not significantly different from female participation via this medium, and age variables for television show somewhat more significance than those for live participation in both periods.

Summary

The results of the logistic regressions generally confirm the findings reported in Part II, even when controlling for other influences. Except for jazz, participation rises with age, income, and education for all art forms and all media, thereby confirming the proffered hypotheses. Other noteworthy findings include the following:

- Education coefficients generally are lower for media participation than for live participation. This suggests that media are something of an equalizer,

TABLE 50. Logistic Regression, Art Participation, 1992

Independent Variable	Live	Television
Urban	.4496***	.1210**,b
Male	– .1590***,a	– .0664
Low income	.4274***	.1442**,b
Moderate income	.6864***	.1886***,b
High income	1.0195***	.3863***,b
High school	1.0449***,a	.7598***,a
College	2.3690***,a	1.4654***,a,b
30-something	– .1280**	.1632***,b
Middle age	– .1172*	.3171***,b
Retired	– .3566***,a	.1246***,b
Black	– .3945***,a	– .4058***,a
Asian	– .2123	– .6519***,b
Indian	.2506	.1965
Hispanic	– .3741***	– .1868**
Constant	–3.3717***	–2.2076***
–2 Log likelihood	11514.743[c]	13461.816[c]
Model chi-square	1758.139***	646.599***
Classification percentage	74.06	69.54

***Significance greater than .01
**Significance greater than .05
*Significance greater than .10
[a]Significantly different from corresponding 1982 coefficient at 5 percent level
[b]Significantly different from corresponding "live" coefficient at 5 percent level
[c]Significantly different from the "perfect" model

diminishing the distinctions in participation patterns by education groupings.

- Similarly, income coefficients are lower for the media equations than for live participation. This indicates that the media also diminish distinctions in participation by income group.
- The urban coefficient is lower for media participation than for live participation. Although the differences are not significant, the nearly uniform pattern indicates that location is not so important for media participation.
- The age coefficients generally are larger for media participation than for live participation, indicating that older groups have relatively greater access to the arts via media as compared with live attendance.
- While the income and education coefficients generally declined between 1982 and 1992, indicating a relative decline in participation distinctions, age coefficients rose, further indicating an aging audience.

Although the explanatory variables, both singly and in concert, are significant and generally have the expected signs, the overall equations lack persuasive explanatory power. Apparently numerous additional factors—or simply a great deal of randomness—influence participation in the arts, both live and via media. In summary, the media seem to be ensuring greater relative access to the arts for various demographic groups.

The Cross Effects of Media and Live Participation

PART IV

What is the nature of the cross effects of live and media participation? Are the media complements to live participation in the arts, or are they substitutes? This part of the monograph offers a partial answer, and the future research agenda points to a fuller answer yet to come.

The tables in the following sections contain the percentages of respondents by column and by row. The top number in each cell is the percentage of those who gave the *row* response and also gave the *column* response. The bottom number in each cell is the percentage of those who gave the *column* response who also gave the *row* response. For example, in Table 52, the first entry under television, No, is 85.6. This is the percentage of respondents who did not participate in live jazz who also did not participate in televised jazz in 1982. The second number, 94.0, is the percentage of those who did not participate in televised jazz who also did not participate in live jazz.

Table 51 shows hypothetical tabular entries for each of two cases. In the first instance, "Medium X," 100 percent of those who do not participate via the medium also do not attend live performances (the "northwest" quadrant), while 100 percent of those who do participate via the medium also attend live performances (the "southeast quadrant"). The same is true of those who attend live performances; they all participate by media. In this case, the two types of participation are perfect complements.

TABLE 51. Hypothetical Table Entries

	Perfect Complements		Perfect Substitutes	
	Medium X		Medium Y	
Live	No	Yes	No	Yes
No	100.0 100.0	0.0 0.0	0.0 0.0	100.0 100.0
Yes	0.0 0.0	100.0 100.0	100.0 100.0	0.0 0.0

For "Medium Y," the opposite is true. None of those who participate via the medium attend live performances, while none of those who attend live performances participate via the medium. Here, the medium and live performances are perfect substitutes.

The reality is not this simple.

Jazz

In general, Tables 52 and 53 indicate that those who did not attend a jazz performance were unlikely to participate in a televised, radio, or recorded performance in either 1982 or 1992. Nor were those who did not participate by media likely to attend live performances.

In 1982, 51.1 percent of respondents who attended a live jazz performance also viewed a performance on television. This percentage had fallen to 43.8 in 1992. By the same token, 28.3 percent who saw jazz on television in 1982 also attended a live performance, but this had fallen to 25.9 percent in 1992. Overall, then, we could state that those who attend live jazz are more likely to watch jazz on television than the converse. In contrast, the percentage of those viewing jazz on television, but not attending a live performance, rose from 71.7 percent in 1982 to 74.1 percent in 1992, indicating that televised jazz may have become a more significant substitute for live attendance over the decade.

Participation by radio showed much the same pattern. Over 58 percent of those who attended a live performance also listened to jazz on the radio in 1982, and this percentage rose to more than 75 percent in 1992. However, the percentage of those who listened to jazz on the radio but did not attend a live performance rose from 67.7 percent to 71.5 percent.

Finally, the percentage who attended live jazz and also listened to a recorded performance rose from 65.5 percent to 67.9 percent over the decade, while the

TABLE 52. Jazz Cross-Participation, 1982

	Television		Radio		Recording	
Live	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**
No	85.6	14.4	86.4	13.6	84.9	15.1
	94.0	71.7	94.9	67.7	95.6	67.2
Yes	48.9	51.1	41.8	58.2	34.5	65.5
	6.0	28.3	5.1	32.3	4.4	32.8

TABLE 53. Jazz Cross-Participation, 1992

	Television		Radio		Recording	
Live	No	Yes	No	Yes	No	Yes
No	85.2	14.8	77.5	22.5	85.1	14.9
	92.7	74.1	96.4	71.5	95.7	64.6
Yes	56.2	43.8	24.3	75.7	32.1	67.9
	7.3	25.9	3.6	28.5	4.3	35.4

percentage who listened to a jazz recording and also attended a live performance also rose, from 32.8 to 35.4.

Overall, the pattern indicates the media provide access for those who choose not to, or are unable to, attend a live performance. Approximately two-thirds to three-fourths of those who indicate media participation in jazz do not attend live performances.

Classical Music

From 1982 to 1992, the percentage of respondents who attended a classical music concert and also viewed classical music on television dropped precipitously, from 62.3 to 51.7 percent, as shown in Tables 54 and 55. As indicated earlier, this trend may well reflect reduced television broadcasting of classical music. The percentage who watched classical music on television and also attended a live performance remained essentially unchanged at just over 29 percent.

TABLE 54. Classical Music Cross-Participation, 1982

	Television		Radio		Recording	
Live	No	Yes	No	Yes	No	Yes
No	80.3	19.7	84.8	15.2	83.7	16.3
	94.1	70.5	93.5	67.3	94.8	65.1
Yes	37.7	62.3	44.4	55.6	34.4	65.6
	5.9	29.5	6.5	32.7	5.2	34.9

TABLE 55. Classical Music Cross-Participation, 1992

	Television		Radio		Recording	
Live	No	Yes	No	Yes	No	Yes
No	82.4	17.6	75.3	24.7	81.9	18.1
	92.3	70.6	95.2	70.3	93.8	66.2
Yes	48.3	51.7	26.6	73.4	36.8	63.2
	7.7	29.4	4.8	29.7	6.2	33.8

Radio and live performance showed a very different pattern. The percentage who attended and also listened on radio rose from 55.6 percent to 73.4 percent over the decade, while the percentage of those who listened and also attended fell slightly, from 32.7 to 29.7 percent. It seems very likely that this shift reflects the nearly ubiquitous availability of classical music on radio by 1992.

Finally, the percentage of those who attended live performances and also listened to recorded performances fell from 65.6 percent to 63.2 percent. This occurred despite the greater sound fidelity afforded by compact discs, widely available in 1992. One can only hazard the guess that relatively higher prices of CDs discouraged potential purchasers/listeners.

Opera

The pattern of cross-participation in opera is quite similar to that for classical music. As shown in Tables 56 and 57, in 1982, well over half of those who attended live performances also watched opera on television; but by 1992 this

TABLE 56. Opera Cross-Participation, 1982

	Television		Radio		Recording	
Live	No	Yes	No	Yes	No	Yes
No	89.0	11.0	93.8	6.2	93.4	6.6
	98.8	89.6	98.7	85.0	98.6	86.2
Yes	45.2	54.8	53.8	46.2	54.9	45.1
	1.2	10.4	1.3	15.0	1.4	13.8

TABLE 57. Opera Cross-Participation, 1992

	Television		Radio		Recording	
Live	No	Yes	No	Yes	No	Yes
No	90.2	9.8	92.7	7.5	94.2	5.8
	97.7	88.6	97.9	84.0	97.9	80.2
Yes	62.3	37.7	57.7	42.3	58.2	41.8
	2.3	11.4	2.1	16.0	2.1	19.8

percentage had fallen to 37.7 percent, probably reflecting reduced availability of televised opera. The percentage of those who watched on television and also attended live opera performances remained low, around 11 percent. It may well be that a taste for opera, as indicated by television participation, is not sufficient to overcome relatively high ticket prices.

The percentage of attenders of live performances who listened to opera on radio fell a bit, from 46.2 to 42.3 percent. Perhaps the fact that less than half of the performance attenders listen on the radio reflects the visual nature of opera, a dimension that is lost on radio.

Finally, the percentage of attenders of live performances who listened to a recorded performance fell from 45.1 percent to 41.8 percent, consistent with the expected impact of higher-priced CDs. (There may also be an aversion among opera aficionados to CD technology, although this remains conjectural.) Interestingly, the percentage of those who listened to a recording and also attended a live performance, while remaining low overall, rose from 13.8 to 19.8 percent. Since live performances did not get less expensive over the decade, this may reflect the larger number of opera companies in 1992, as well as greater audiences for existing companies.[20]

Musicals

The percentage of respondents who attended live musical performances and also watched on television fell substantially—from 43.8 to 24.7 percent—over the decade, as shown in Tables 58 and 59. This very likely reflects a decline in the availability of televised musicals during that period. The reason for the decline—not so stark—in the percentage of television viewers of musicals who also attended live performances is not so clear.

Very few—between 8 and 9 percent in both survey periods—of those who

TABLE 58. Musical Cross-Participation, 1982

	Television		Radio		Recording	
Live	No	Yes	No	Yes	No	Yes
No	85.1	14.9	96.7	3.3	95.0	5.0
	86.7	59.5	82.0	62.3	84.1	48.2
Yes	56.2	43.8	91.4	8.6	77.1	22.9
	13.3	40.5	18.0	37.7	15.9	51.8

TABLE 59. Musical Cross-Participation, 1992

	Television		Radio		Recording	
Live	No	Yes	No	Yes	No	Yes
No	90.0	10.0	97.6	2.4	96.9	3.1
	85.1	65.8	83.5	58.0	84.7	44.6
Yes	75.3	24.7	91.6	8.4	82.1	17.9
	14.9	34.2	16.5	42.0	15.3	55.4

attended a live musical performance also listened on radio, probably because the medium does not lend itself well to this art form. Memorable and listenable songs are interspersed with spoken dialogue. Furthermore, the visual aspects of musicals are lost to the radio listener. Of those who do choose to listen to musicals on the radio, however, the percentage who attend live performances rose over the decade, from 37.7 to 42 percent. While this may reflect growth of new performing venues and the resurgence of Broadway touring companies, these phenomena did not show up in the television figures.

The decline in the percentage of attenders at live performances who also listened to recorded performances (from 22.9 percent in 1982 to 17.9 percent in 1992) may reflect both the increased prices of CDs and the failure of recordings to convey adequately the visual aspects of musicals.

Theater (Plays)

Among the media, only television lends itself well to theater participation. Even so, among those who attended live performances, the percentage who also

TABLE 60. Theater (Plays) Cross-Participation, 1982

	Television		Radio	
Live	No	Yes	No	Yes
No	78.1	21.9	97.0	3.0
	93.6	75.3	89.6	68.9
Yes	42.6	57.4	89.4	10.6
	6.4	24.7	10.4	31.1

TABLE 61. Theater (Plays) Cross-Participation, 1992

	Television		Radio	
Live	No	Yes	No	Yes
No	88.0	12.0	97.9	2.1
	89.4	70.0	87.1	65.7
Yes	66.9	33.1	92.8	7.2
	10.6	30.0	12.9	34.3

viewed plays on television fell from 57.4 percent in 1982 to 33.1 percent in 1992, as shown in Tables 60 and 61. Once again we may speculate that this is due to reduced availability on broadcast television. On the other hand, those who *do* watch drama on television were more likely to attend live performances in 1992 than in 1982.

Attenders of live theater performances are not very likely to listen to plays on the radio. In 1982, only 10.6 percent did so, and this fell to 7.2 percent in 1992. But the percentage of those who do listen to radio broadcasts *and* also attend live performances rose from 31.1 to 34.3 percent.

Ballet/Dance

Changes over the decade in ballet and dance participation must be interpreted in light of the fact that the dance forms reported here are not strictly comparable. Given that caveat, it is notable that while 57 percent of those who attended a live ballet performance in 1982 also viewed a televised performance,

TABLE 62. Ballet Cross-Participation, 1982

	Television	
Live	**No**	**Yes**
No	85.4 97.9	14.6 85.6
Yes	43.0 2.1	57.0 14.4

TABLE 63. Dance Cross-Participation, 1992

	Television	
Live	**No**	**Yes**
No	84.6 94.9	15.4 83.2
Yes	59.5 5.1	40.5 16.8

only 40.5 percent did so with respect to dance, more broadly defined, in 1992 (see Tables 62 and 63). In both time periods, the vast majority of those who did watch ballet or dance on television did not attend a live performance.

Art

As indicated in Tables 64 and 65, the proportion of those who attended an art museum and also saw a televised program on art rose from just under half in 1982 to just over half 10 years later. Likewise, the proportion of those who watched a program and also visited a museum rose. Among all the art forms, this is the sole instance of increased cross-participation in both directions.

TABLE 64. Art Cross-Participation, 1982

	Television	
Live	**No**	**Yes**
No	84.1 85.0	15.9 54.4
Yes	52.8 15.0	47.2 45.6

TABLE 65. Art Cross-Participation, 1992

	Television	
Live	**No**	**Yes**
No	78.0 82.3	21.5 52.7
Yes	46.3 17.7	53.2 47.3

Summary and Conclusions

The statistics related to cross-participation in the arts via media alternatives and live attendance indicate that those who shunned live attendance also shunned media participation and vice versa; but very often, a majority of those who participated by media did *not* attend live performances or showings. A more positive slant is that respondents who did not attend live performances or showings did participate by media. This further suggests that the media constitute a more-or-less readily available alternative to live attendance. While in many cases this percentage declined over the 10-year period between surveys, we can only speculate that media participation may have encouraged greater attendance at the arts.

Summary and Conclusions

PART V

This monograph examines patterns of public participation in seven core, or "benchmark," arts via selected electronic media: television, radio, and recordings. More specifically, it examines the demographic determinants of participation via media and how the demographics may differ between live and media participation. Testable hypotheses derived from the theory of consumer demand were tested with data from the 1982 and 1992 Surveys of Public Participation in the Arts.

This part of the monograph reviews the hypotheses and findings, ventures some policy implications, and issues the standard call for further research. After all, any exploration of this nature should uncover new questions even as it strives to answer existing ones.

Major Findings

The results of the statistical analysis are consistent with the hypotheses and with previously existing evidence that arts participation increases with age. This is true of media participation as well as live participation. While this means that an aging population will, other things being equal, enhance arts participation, it also bodes less well for the future, when the smaller, post–baby boom generation is in the ascendancy. Even if participation rates remain high, the numbers may decline and imperil arts providers.

The results reported here also confirm numerous prior analyses of the impact of education. A more educated populace is more "arts friendly," and rates for both live and media participation rise with education.

Arts participation also rises as income increases. But of special note here is that participation via media—especially the broadcast media—is not so income dependent. This reflects the likelihood that additional out-of-pocket costs of listening to the radio or viewing television are negligible, so that broadcast arts are accessible to those without high incomes.

While urban residents are more likely than rural residents to participate in the arts via media as well as to attend live performances, the difference is not so strong for media participation. This suggests that the media provide relatively greater access to the arts for nonurban residents.

Other demographic variables, including race and gender of respondent, were employed here primarily for control purposes. Findings confirm that whites are more likely to participate than nonwhites, and women more than men, except in the case of jazz.

Policy Implications

With the increasing availability of cable and direct satellite access television, literally hundreds of channels will be available to viewers. Some of these could surely be dedicated to the arts, and even to specific art forms: the opera channel, the symphony channel, the Schubert channel, the post-modern dance channel, and so forth. This will promote both variety and access.

Since education exposure seems to be consistent with development of taste for the arts, educators and educational institutions at all levels may take advantage of both live and media access to the arts and develop arts curricula that incorporate instructional technology.

Special arts events—"The Three Tenors," for example—represent opportunities for "blockbuster" broadcasts and subsequent audio and video recordings.[21] Improving technology and increasing competition continue to drive down the prices of such recordings, making them available to potential buyers with limited incomes.

The rapid development of distance learning techniques and instructional technologies offer opportunities for arts programming to reach audiences via the Internet, CD-ROM, interactive television, and means as yet unforeseen. One can imagine, for example, a CD-ROM that plays a symphony, portrays the orchestra, and tracks the score simultaneously, allowing the viewer to suspend the performance at any time for an interactive help session or to access expert commentary. Public seed monies may be useful to support such innovations.

Future Research

Many additional questions remain. What, for example, might be the cross effects revealed by a simultaneous logit model, whereby live and media participation are hypothesized to affect each other? How sensitive are these results to the choice of educational, income, and age groupings?

What information might be gained from more frequent surveys as well as more specific geographic breakdowns of data? It is easy to imagine that annual or biannual data for, say, a metropolitan area would provide feedback on the

effect of pricing policies on participation, the role of changes in amount or structure of subsidies, the impact of new technologies, and similar time-dependent changes.

Even as the data gleaned from these surveys continue to undergo scrutiny, planning and implementation of successive efforts should be underway. The arts and arts policy are too important to be left to interpolation and other forms of informed guesswork.

Appendix A:

1992 Survey of Public Participation in the Arts

INTRODUCTION – Now I have some questions about your leisure activities. The Bureau of the Census is collecting this information for the National Endowment for the Arts. The survey is authorized by Title 20, United States Code, section 954 and Title 13, United States Code, section 8. Your participation in this interview is voluntary and there are no penalties for not answering some or all of the questions. *(If PERSONAL INTERVIEW, hand respondent the Privacy Act Statement, SPPA-13.)*

PGM 3

1. The following questions are about YOUR activities during the LAST 12 months— between _____ 1, 19 ____, and _____ ____, 19 ____.

With the exception of elementary or high school performances, did YOU go to a live jazz performance during the LAST 12 MONTHS?

010 ○ No

Yes – **About how many times did you do this during the LAST 12 MONTHS?**

☐☐☐ Number of times

2. (With the exception of elementary or high school performances,) Did you go to a live classical music performance such as symphony, chamber, or choral music during the LAST 12 MONTHS?

011 ○ No

Yes – **About how many times did you do this during the LAST 12 MONTHS?**

☐☐☐ Number of times

3. (With the exception of elementary or high school performances,) Did you go to a live opera during the LAST 12 MONTHS?

012 ○ No

Yes – **About how many times did you do this during the LAST 12 MONTHS?**

☐☐☐ Number of times

4. (With the exception of elementary or high school performances,) Did you go to a live musical stage play or an operetta during the LAST 12 MONTHS?

013 ○ No

Yes – **About how many times did you do this during the LAST 12 MONTHS?**

☐☐☐ Number of times

5. (With the exception of elementary or high school performances,) Did you go to a live performance of a non-musical stage play during the LAST 12 MONTHS?

014 ○ No

Yes – **About how many times did you do this during the LAST 12 MONTHS?**

☐☐☐ Number of times

6. (With the exception of elementary or high school performances,) Did you go to a live ballet performance during the LAST 12 MONTHS?

015 ○ No

Yes – **About how many times did you do this during the LAST 12 MONTHS?**

☐☐☐ Number of times

7. (With the exception of elementary or high school performances,) Did you go to a live dance performance other than ballet, such as modern, folk, or tap during the LAST 12 MONTHS?

016 ○ No

Yes – **About how many times did you do this during the LAST 12 MONTHS?**

☐☐☐ Number of times

8. (During the LAST 12 MONTHS,) Did you visit an ART museum or gallery?

017 ○ No

Yes – **About how many times did you do this during the LAST 12 MONTHS?**

☐☐☐ Number of times

9. (During the LAST 12 MONTHS,) Did you visit an ART fair or festival, or a CRAFT fair or festival?

018 ○ No

Yes – **About how many times did you do this during the LAST 12 MONTHS?**

☐☐☐ Number of times

10. (During the LAST 12 MONTHS,) Did you visit an historic park or monument, or tour buildings, or neighborhoods for their historic or design value?

019 0☐No
Yes – **About how many times did you do this during the LAST 12 MONTHS?**
☐☐☐ Number of times

11. With the exception of books required for work or school, did you read any books during the LAST 12 MONTHS?

020 0☐No
Yes – **About how many books did you read during the LAST 12 MONTHS?**
☐☐☐ Number of books

12. (During the LAST 12 MONTHS,) Did you read any –

Read answer categories

a. Plays? 021 1☐No 2☐Yes

b. Poetry? 022 1☐No 2☐Yes

c. Novels or short stories? 023 1☐No 2☐Yes

13. (During the LAST 12 MONTHS,) Did you listen to –

a. A reading of poetry, either live or recorded? 024 1☐No 2☐Yes

b. A reading of novels or books either live or recorded? 025 1☐No 2☐Yes

14a. (During the LAST 12 MONTHS,) Did you watch a jazz performance on television or a video (VCR) tape?

026 1☐No – *Skip to item 14c*
Yes – **Was that on TV, VCR, or both?**
2☐TV
3☐VCR
4☐Both

b. About how many times did you do this in the LAST 12 MONTHS?

027 ☐☐☐ Number of times

c. (During the LAST 12 MONTHS,) Did you listen to jazz on radio?

028 1☐No
2☐Yes

d. (During the LAST 12 MONTHS,) Did you listen to jazz records, tapes, or compact discs?

029 1☐No
2☐Yes

15a. (During the LAST 12 MONTHS,) Did you watch a classical music performance on television or a video (VCR) tape?

030 1☐No – *Skip to item 15c*
Yes – **Was that on TV, VCR, or both?**
2☐TV
3☐VCR
4☐Both

b. About how many times did you do this (in the LAST 12 MONTHS)?

031 ☐☐☐ Number of times

c. (During the LAST 12 MONTHS,) Did you listen to classical music on radio?

032 1☐No
2☐Yes

d. (During the LAST 12 MONTHS,) Did you listen to classical music records, tapes or compact discs?

033 1☐No
2☐Yes

16a. (During the LAST 12 MONTHS,) Did you watch an opera on television or a video (VCR) tape?

034 1☐No – *Skip to item 16c*
Yes – **Was that on TV, VCR, or both?**
2☐TV
3☐VCR
4☐Both

b. About how many times did you do this (in the LAST 12 MONTHS)?

035 ☐☐☐ Number of times

c. (During the LAST 12 MONTHS,) Did you listen to opera music on radio?

036 1☐No
2☐Yes

d. (During the LAST 12 MONTHS,) Did you listen to opera music records, tapes, or compact discs?

037 1☐No
2☐Yes

17a. With the exception of movies, did you watch a musical stage play or an operetta on television or a video (VCR) tape during the LAST 12 MONTHS?

038 1☐No – *Skip to item 17c*
Yes – **Was that on TV, VCR, or both?**
2☐TV
3☐VCR
4☐Both

b. About how many times did you do this (in the LAST 12 MONTHS)?

039 ☐☐☐ Number of times

c. (During the LAST 12 MONTHS,) Did you listen to a musical stage play or an operetta on radio?

040 1☐No
2☐Yes

d. (During the LAST 12 MONTHS,) Did you listen to a musical stage play or an operetta on records, tapes, or compact discs?

041 1☐No
2☐Yes

18a. With the exception of movies, situation comedies, or TV series, did you watch a non-musical stage play on television or a video (VCR) tape during the LAST 12 MONTHS?

042
1☐No – *Skip to item 18c*
Yes – **Was that on TV, VCR, or both?**
2☐TV
3☐VCR
4☐Both

b. About how many times did you do this (in the LAST 12 MONTHS)?

043 ☐☐☐ Number of times

c. (During the LAST 12 MONTHS,) Did you listen to a radio performance of a non-musical stage play?

044
1☐No
2☐Yes

19a. With the exception of music videos, did you watch on television or a video (VCR) tape dance such as ballet, modern, folk, or tap during the LAST 12 MONTHS?

045
1☐No – *Skip to item 20a*
Yes – **Was that on TV, VCR, or both?**
2☐TV
3☐VCR
4☐Both

b. About how many times did you do this (in the LAST 12 MONTHS)?

046 ☐☐☐ Number of times

20a. (During the LAST 12 MONTHS,) Did you watch a program about artists, art works, or art museums on television or a video (VCR) tape?

047
1☐No – *Skip to item 21a*
Yes – **Was that on TV, VCR, or both?**
2☐TV
3☐VCR
4☐Both

b. About how many times did you do this (in the LAST 12 MONTHS)?

048 ☐☐☐ Number of times

21a. I'm going to read a list of events that some people like to attend. If you could go to any of these events as often as you wanted, which ones would you go to MORE OFTEN than you do now? I'll read the list. Go to –

Mark (X) all that apply.

053
1☐**Jazz music performances**
2☐**Classical music performances**
3☐**Operas**
4☐**Musical plays or operettas**
5☐**Non-musical plays**
6☐**Ballet performances**
7☐**Dance performances other than ballet**
8☐**Art museums or galleries**
9☐None of these – *Skip to item 22a*

If only one is chosen, skip to item 22a.
If more than one is chosen, ask –

b. Which of these would you like to do most?

054 ☐☐ Category number
00☐No one thing most

22a. The following questions are about your participation in other leisure activities.

Approximately how many hours of television do you watch on an average day?

055 ☐☐ Number of hours

b. During the LAST 12 MONTHS, did YOU go out to the movies?

056
1☐No
2☐Yes

c. With the exception of youth sports, did you go to any amateur or professional sports events during the LAST 12 MONTHS?

057
1☐No
2☐Yes

d. During the LAST 12 MONTHS, did you go to an amusement or theme park, a carnival, or a similar place of entertainment?

058
1☐No
2☐Yes

e. During the LAST 12 MONTHS, did you jog, lift weights, walk, or participate in any other exercise program?

059
1☐No
2☐Yes

f. During the LAST 12 MONTHS, did you participate in any sports activity, such as softball, basketball, golf, bowling, skiing, or tennis?

060
1☐No
2☐Yes

g. Did you participate in any outdoor activities, such as camping, hiking, or canoeing during the LAST 12 MONTHS?

061
1☐No
2☐Yes

h. Did you do volunteer or charity work during the LAST 12 MONTHS?

062
1☐No
2☐Yes

i. Did you make repairs or improvements on your own home during the LAST 12 MONTHS?

063
1☐No
2☐Yes

j. Did you work with indoor plants or do any gardening for pleasure during the LAST 12 MONTHS?

064
1☐No
2☐Yes

23a. (During the LAST 12 MONTHS,) Did you work with pottery, ceramics, jewelry, or do any leatherwork or metalwork?

065
1☐No – *Skip to item 24a*
2☐Yes

b. Did you publicly display any of your works?

066
1☐No
2☐Yes

24a. (During the LAST 12 MONTHS,) Did you do any weaving, crocheting, quilting, needlepoint, or sewing?

067 1☐No – *Skip to item 25a*
2☐Yes

b. Did you publicly display any of your works?

068 1☐No
2☐Yes

25a. (During the LAST 12 MONTHS,) Did you make photographs, movies, or video tapes as an artistic activity?

069 1☐No – *Skip to item 26a*
2☐Yes

b. Did you publicly display any of your works?

070 1☐No
2☐Yes

26a. (During the LAST 12 MONTHS,) Did you do any painting, drawing, sculpture, or printmaking activities?

071 1☐No – *Skip to item 27a*
2☐Yes

b. Did you publicly display any of your works?

072 1☐No
2☐Yes

27a. With the exception of work or school, did you do any creative writing such as stories, poems, or plays during the LAST 12 MONTHS?

073 1☐No – *Skip to item 28a*
2☐Yes

b. Were any of your writings published?

074 1☐No
2☐Yes

28a. Did you write or compose any music during the LAST 12 MONTHS?

075 1☐No – *Skip to item 29a*
2☐Yes

b. Was your musical composition played in a public performance or rehearsed for a public performance?

076 1☐No
2☐Yes

29a. Do you own any original pieces of art, such as paintings, drawings, sculpture, prints, or lithographs?

077 1☐No – *Skip to item 30a*
2☐Yes

b. Did you purchase or acquire any of these pieces during the LAST 12 MONTHS?

078 1☐No
2☐Yes

30a. During the LAST 12 MONTHS, did you perform or rehearse any jazz music?

079 1☐No – *Skip to item 31a*
2☐Yes

30b. Did you play any jazz in a public performance or rehearse for a public performance?

080 1☐No
2☐Yes

31a. During the LAST 12 MONTHS, did you play any classical music?

081 1☐No – *Skip to item 32a*
2☐Yes

b. Did you play classical music in a public performance or rehearse for a public performance?

082 1☐No
2☐Yes

32a. During the LAST 12 MONTHS, did you sing any music from an opera?

083 1☐No – *Skip to item 33a*
2☐Yes

b. Did you sing in a public opera performance or rehearse for a public performance?

084 1☐No
2☐Yes

33a. During the LAST 12 MONTHS, did you sing music from a musical play or operetta?

085 1☐No – *Skip to item 33c*
2☐Yes

b. Did you sing in a public performance of a musical play or operetta or rehearse for a public performance?

086 1☐No
2☐Yes

c. During the LAST 12 MONTHS, did you sing in a public performance with a chorale, choir, or glee club or other type of vocal group, or rehearse for a public performance?

087 1☐No
2☐Yes

34. (During the LAST 12 MONTHS,) Did you act in a public performance of a non-musical play or rehearse for a public performance?

088 1☐No
2☐Yes

35a. (During the LAST 12 MONTHS,) Did you dance any ballet?

089 1☐No – *Skip to item 36a*
2☐Yes

b. Did you dance ballet in a public performance or rehearse for a public performance?

090 1☐No
2☐Yes

36a. (During the LAST 12 MONTHS,) Did you do any dancing other than ballet such as modern, folk, or tap?

091 1☐No – *Skip to item 37a*
2☐Yes

b. Did you dance modern, folk, or tap in a public performance?

092 1☐No
2☐Yes

37a. I'm going to read a list of some types of music. As I read the list, tell me which of these types of music you like to listen to?

Mark (X) all that apply.

093 ✲ 094 ✲ 095 ✲ 096 ✲ 097 ✲ 098 ✲
- 1 ☐ **Classical/Chamber music**
- 2 ☐ **Opera**
- 3 ☐ **Operetta/Broadway musicals/Show tunes**
- 4 ☐ **Jazz**
- 5 ☐ **Reggae (Rēg gāy')**
- 6 ☐ **Rap music**
- 7 ☐ **Soul**
- 8 ☐ **Blues/Rhythm and blues**
- 9 ☐ **Latin/Spanish/Salsa**
- 10 ☐ **Big band**
- 11 ☐ **Parade/Marching band**
- 12 ☐ **Country-western**
- 13 ☐ **Bluegrass**
- 14 ☐ **Rock**
- 15 ☐ **The music of a particular Ethnic/ National tradition**
- 16 ☐ **Contemporary folk music**
- 17 ☐ **Mood/Easy listening**
- 18 ☐ **New age music**
- 19 ☐ **Choral/Glee club**
- 20 ☐ **Hymns/Gospel**
- 21 ☐ All
- 22 ☐ None/Don't like to listen to music – *Skip to item 38a*

b. *If only one category is marked in 37a, enter code in 37b without asking.* **Which of these do you like best?**

099 ☐☐ Category number

00 ☐ No one type best

38a. Have you EVER taken lessons or classes in music – either voice training or playing an instrument?

100
- 1 ☐ No – *Skip to item 39a*
- 2 ☐ Yes

b. Did you take these lessons when you were –
Read categories. (Do not read category 4 if respondent is under 25 years old.)
Mark (X) all that apply.

101 ✲
- 1 ☐ **Less than 12 years old**
- 2 ☐ **12–17 years old**
- 3 ☐ **18–24 years old**
- 4 ☐ **25 or older**

CHECK ITEM A

Refer to item 38b

Is box 1 or 2 marked in item 38b?

☐ No – *Skip to Check Item B*
☐ Yes – *Ask item 38c*

38c. Were these lessons or classes offered by the elementary or high school you were attending or did you take these lessons elsewhere?

102
- 1 ☐ Elementary/high school
- 2 ☐ Elsewhere
- 3 ☐ Both

CHECK ITEM B

Refer to item 38b

If box 4 is marked in item 38b, ASK item 38d.

If not – Is box 2 or 3 marked in item 38b AND the respondent is under 25 years old?

☐ No – *Skip to item 39a*
☐ Yes – *Ask item 38d*

38d. Did you take any of these lessons or classes in the past year?

103
- 1 ☐ No
- 2 ☐ Yes

39a. (Have you EVER taken lessons or classes) in visual arts such as sculpture, painting, print making, photography, or film making?

104
- 1 ☐ No – *Skip to item 40a*
- 2 ☐ Yes

b. Did you take these lessons when you were –
Read categories. (Do not read category 4 if respondent is under 25 years old.)
Mark (X) all that apply.

105 ✲
- 1 ☐ **Less than 12 years old**
- 2 ☐ **12–17 years old**
- 3 ☐ **18–24 years old**
- 4 ☐ **25 or older**

CHECK ITEM C

Refer to item 39b

Is box 1 or 2 marked in item 39b?

☐ No – *Skip to Check Item D*
☐ Yes – *Ask item 39c*

39c. Were these lessons or classes offered by the elementary or high school you were attending or did you take these lessons elsewhere?

106
- 1 ☐ Elementary/high school
- 2 ☐ Elsewhere
- 3 ☐ Both

CHECK ITEM D

Refer to item 39b

If box 4 is marked in item 39b, ASK item 39d.

If not – Is box 2 or 3 marked in item 39b AND the respondent is under 25 years old?

☐ No – *Skip to item 40a*
☐ Yes – *Ask item 39d*

39d. Did you take any of these lessons or classes in the past year?

107
- 1 ☐ No
- 2 ☐ Yes

40a. (Have you EVER taken lessons or classes) in acting or theater?

108
- 1 ☐ No – *Skip to item 41a*
- 2 ☐ Yes

b. Did you take these lessons when you were –
Read categories. (Do not read category 4 if respondent is under 25 years old.)
Mark (X) all that apply.

109 ✲
- 1 ☐ **Less than 12 years old**
- 2 ☐ **12–17 years old**
- 3 ☐ **18–24 years old**
- 4 ☐ **25 or older**

CHECK ITEM E

Refer to item 40b

Is box 1 or 2 marked in item 40b?

☐ No – *Skip to Check Item F*
☐ Yes – *Ask item 40c*

40c. Were these lessons or classes offered by the elementary or high school you were attending or did you take these lessons elsewhere?

110
- 1 ☐ Elementary/high school
- 2 ☐ Elsewhere
- 3 ☐ Both

CHECK ITEM F

Refer to item 40b

If box 4 is marked in item 40b, ASK item 40d.

If not – Is box 2 or 3 marked in item 40b AND the respondent is under 25 years old?

☐ No – *Skip to item 41a*
☐ Yes – *Ask item 40d*

40d. Did you take any of these lessons or classes in the past year?

111 1 ☐ No
2 ☐ Yes

41a. (Have you EVER taken lessons or classes) in ballet?

112 1 ☐ No – *Skip to item 42a*
2 ☐ Yes

b. Did you take these lessons when you were –
Read categories. (Do not read category 4 if respondent is under 25 years old.)
Mark (X) all that apply.

113 1 ☐ **Less than 12 years old**
2 ☐ **12–17 years old**
3 ☐ **18–24 years old**
4 ☐ **25 or older**

CHECK ITEM G

Refer to item 41b

Is box 1 or 2 marked in item 41b?

☐ No – *Skip to Check Item H*
☐ Yes – *Ask item 41c*

41c. Were these lessons or classes offered by the elementary or high school you were attending or did you take these lessons elsewhere?

114 1 ☐ Elementary/high school
2 ☐ Elsewhere
3 ☐ Both

CHECK ITEM H

Refer to item 41b

If box 4 is marked in item 41b, ASK item 41d.

If not – Is box 2 or 3 marked in item 41b AND the respondent is under 25 years old?

☐ No – *Skip to item 42a*
☐ Yes – *Ask item 41d*

41d. Did you take any of these lessons or classes in the past year?

115 1 ☐ No
2 ☐ Yes

42a. (Have you EVER taken lessons or classes) in dance, other than ballet such as modern, folk or tap?

116 1 ☐ No – *Skip to item 43a*
2 ☐ Yes

b. Did you take these lessons when you were –
Read categories. (Do not read category 4 if respondent is under 25 years old.)
Mark (X) all that apply.

117 1 ☐ **Less than 12 years old**
2 ☐ **12–17 years old**
3 ☐ **18–24 years old**
4 ☐ **25 or older**

CHECK ITEM I

Refer to item 42b

Is box 1 or 2 marked in item 42b?

☐ No – *Skip to Check Item J*
☐ Yes – *Ask item 42c*

42c. Were these lessons or classes offered by the elementary or high school you were attending or did you take these lessons elsewhere?

118 1 ☐ Elementary/high school
2 ☐ Elsewhere
3 ☐ Both

CHECK ITEM J

Refer to item 42b

If box 4 is marked in item 42b, ASK item 42d.

If not – Is box 2 or 3 marked in item 42b AND the respondent is under 25 years old?

☐ No – *Skip to item 43a*
☐ Yes – *Ask item 42d*

42d. Did you take any of these lessons or classes in the past year?

119 1 ☐ No
2 ☐ Yes

43a. Have you EVER taken lessons or classes in creative writing?

120 1 ☐ No – *Skip to item 44a*
2 ☐ Yes

b. Did you take these lessons when you were –
Read categories. (Do not read category 4 if respondent is under 25 years old.)
Mark (X) all that apply.

121 1 ☐ **Less than 12 years old**
2 ☐ **12–17 years old**
3 ☐ **18–24 years old**
4 ☐ **25 or older**

CHECK ITEM K

Refer to item 43b

Is box 1 or 2 marked in item 43b?

☐ No – *Skip to Check Item L*
☐ Yes – *Ask item 43c*

43c. Were these lessons or classes offered by the elementary or high school you were attending or did you take these lessons elsewhere?

122 1 ☐ Elementary/high school
2 ☐ Elsewhere
3 ☐ Both

CHECK ITEM L

Refer to item 43b

If box 4 is marked in item 43b, ASK item 43d.

If not – Is box 2 or 3 marked in item 43b AND the respondent is under 25 years old?

☐ No – *Skip to item 44a*
☐ Yes – *Ask item 43d*

43d. Did you take any of these lessons or classes in the past year?

123 1 ☐ No
2 ☐ Yes

44a. (Have you EVER taken a class) in art appreciation or art history?

124 1 ☐ No – *Skip to item 45a*
2 ☐ Yes

b. Did you take this class when you were –
Read categories. (Do not read category 4 if respondent is under 25 years old.)
Mark (X) all that apply.

125 1 ☐ **Less than 12 years old**
2 ☐ **12–17 years old**
3 ☐ **18–24 years old**
4 ☐ **25 or older**

CHECK ITEM M

Refer to item 44b

Is box 1 or 2 marked in item 44b?

☐No – *Skip to Check Item N*
☐Yes – *Ask item 44c*

44c. Was this class offered by the elementary or high school you were attending or did you take this class elsewhere?

126 1☐Elementary/high school
2☐Elsewhere
3☐Both

CHECK ITEM N

Refer to item 44b

If box 4 is marked in item 44b, ASK item 44d.

If not – Is box 2 or 3 marked in item 44b AND the respondent is under 25 years old?

☐No – *Skip to item 45a*
☐Yes – *Ask item 44d*

44d. Did you take any of these lessons or classes in the past year?

127 1☐No
2☐Yes

45a. (Have you EVER taken a class) in music appreciation?

128 1☐No – *Skip to item 46a*
2☐Yes

b. Did you take this class when you were –
Read categories. (Do not read category 4 if respondent is under 25 years old.)
Mark (X) all that apply.

129 1☐**Less than 12 years old**
✲ 2☐**12–17 years old**
3☐**18–24 years old**
4☐**25 or older**

CHECK ITEM O

Refer to item 45b

Is box 1 or 2 marked in item 45b?

☐No – *Skip to Check Item P*
☐Yes – *Ask item 45c*

45c. Was this class offered by the elementary or high school you were attending or did you take this class elsewhere?

130 1☐Elementary/high school
2☐Elsewhere
3☐Both

CHECK ITEM P

Refer to item 45b

If box 4 is marked in item 45b, ASK item 45d.

If not – Is box 2 or 3 marked in item 45b AND the respondent is under 25 years old?

☐No – *Skip to item 46a*
☐Yes – *Ask item 45d*

45d. Did you take this class in the past year?

131 1☐No
2☐Yes

46a. What is the highest grade (or year) of regular school your FATHER completed?

132 01☐7th grade or less
02☐8th grade
03☐9th–11th grades
04☐12th grade
05☐College (did not complete)
06☐Completed college (4+ years)
07☐Post graduate degree (M.A., Ph.D., M.D., J.D., etc.)
08☐Don't know

b. What is the highest grade (or year) of regular school your MOTHER completed?

133 01☐7th grade or less
02☐8th grade
03☐9th–11th grades
04☐12th grade
05☐College (did not complete)
06☐Completed college (4+ years)
07☐Post graduate degree (M.A., Ph.D., M.D., J.D., etc.)
08☐Don't know

CHECK ITEM Q

Is this the LAST household member to be interviewed?

☐No – *Go back to the NCS-1 and interview the next eligible NCS household member*
☐Yes – *END INTERVIEW*

Notes

Appendix B:

Technical Discussion of Logistic Regression

Logistic regression is useful in explaining why an event occurs or in predicting whether or not an event will occur, e.g. whether or not a person watches televised symphony concerts. The response alternatives in this case are "yes" or "no." The usual multiple regression model is written in linear form as

$$Y = \beta_0 + \beta_1 X_1 + \ldots + \beta_n X_n$$

In such a case, the dependent variable, Y, is ordinarily a continuous variable, and certain additional conditions must be met to have fullest confidence in the utility of the model.[22]

When the dependent variable takes only two values, as is often the case in survey data, the linear regression model fails, and an alternative model is required.[23] The logistic regression model is one such alternative, and it can be written as

$$Prob\,(event) = \frac{e^z}{1 + e^z}$$

or

$$Prob\,(event) = \frac{1}{1 + e^{-z}}$$

where Z is the linear combination

$$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n$$

for n explanatory variables.

An alternative and equivalent expression is

$$\log \left(\frac{Prob\,(event)}{Prob\,(no\ event)}\right) = Z$$

which is the log of the odds. The dependent variable, Z, may be attendance at a classical music concert, with a "yes" response coded as 1 and "no" as 0. One explanatory variable, say X_1, may be gender, with "male" coded as 1 and "female" as 0, and another, say X_2, may be household income, measured in dollars. A positive value of β_1 would indicate higher attendance by males than females, and a positive value of β_2 would indicate higher participation by higher income families, as compared with lower income families. In logistic regression, the model parameters $\beta(_i)$ are estimated using the maximum-likelihood method.

For large sample sizes, the test that a coefficient is 0 (i.e., that an explanatory variable has no influence) is based on the Wald statistic, which has a chi-square distribution.[24] The goodness of fit of the model can be assessed by a variety of indicators. Those used in this monograph are the log-likelihood, which compares the statistical results to a "perfect" model, the model chi-square, which tests the hypothesis that the included variables jointly are significant, and the percent of cases correctly classified by the model.

Notes

1. The three commonly recognized types of market failure are monopoly power, positive or negative "externalities" (e.g., pollution), and collective goods (e.g., national defense). Broadcasting media are an example of the last of these; the arts in general are said to have characteristics of positive externalities. For a more complete discussion, see James Heilbrun and Charles M. Gray, *The Economics of Art and Culture* (New York: Cambridge University Press, 1993), especially chapter 11.
2. See Jack Faucett and Associates, *Arts Participation in America: 1982–1992,* National Endowment for the Arts Research Division Report #27, 1993, Appendix C.4.
3. A third, intermediate survey was conducted in 1985. Preliminary analyses of that data indicate that they offer insufficient new information to merit analysis. The trend patterns are inferior to those offered by the 1982 results, and the 1992 survey offers a superior account of current patterns. All three are included in *Arts Participation in America: 1982–1992,* Research Division Report #27, National Endowment for the Arts (October 1993).
4. See the discussion in James Heilbrun and Charles M. Gray, *The Economics of Art and Culture: An American Perspective* (Cambridge: Cambridge University Press, 1993), chapter 16.
5. For a lively and entertaining account of the early history of cultural programming on commercial television, see Brian G. Rose, *Television and the Performing Arts* (Westport, CT: Greenwood Press, 1986). For an account of programming supported by the National Endowment for the Arts, see NEA, *The Arts on Television, 1976–1990,* compiled by Rebeccah Krafft (Washington, DC: U.S. Government Printing Office, 1991).
6. For a more extensive discussion of these points, see James Heilbrun and Charles M. Gray, *The Economics of Art and Culture: An American Perspective* (Cambridge: Cambridge University Press, 1993), pp. 199–216, and the citations therein.
7. In the broadcast case, we can think of a supply curve that is horizontal ("perfectly elastic") at a zero price.
8. For a general discussion, see James Heilbrun and Charles M. Gray, *The Economics of Art and Culture: An American Perspective* (Cambridge: Cambridge University Press, 1993), pp. 302–306. Two studies by James Heilbrun offer additional insights. See his "Growth and Geographic Distribution of the Arts in the U.S.," in Douglas V. Shaw et al., eds., *Artists and Cultural Consumers* (Akron: Association for Cultural Economics, 1987), pp. 24–36, and "The Distribution of Arts Activity Among U.S. Metropolitan Areas," in Douglas V. Shaw et al., eds., *Cultural Economics, 88: An American Perspective* (Akron: Association for Cultural Economics, 1989), pp. 33–40.

9. This is due largely to Tibor Scitovsky, *The Joyless Economy* (Oxford University Press, 1976), ch. 11, "Our Disdain for Culture," pp. 224–247.
10. We should note that the survey instrument asks about "listening" to a recording, not "buying" one. Yet *someone* must have purchased a CD or other sound recording, and it seems reasonable to assume that the respondent may, in fact, have been the purchaser. Hence we treat listening as roughly synonymous with purchasing for purposes of hypothesis development.
11. U.S. Bureau of the Census, *Statistical Abstract of the United States: 1993* (Washington, DC: U.S. Government Printing Office, 1993), Table 901, p. 561.
12. Ibid.
13. A technical discussion of econometric techniques, including regression, is far beyond the scope of this monograph. The interested reader can pursue any of a number of elementary treatments, including Peter Kennedy, *A Guide to Econometrics,* 3rd. ed. (Cambridge, MA: MIT Press, 1993). A brief exposition of the technique used here is included in Appendix B.
14. Perhaps the classic reference is G. S. Maddala, *Limited-Dependent and Qualitative Variables in Econometrics* (Cambridge: Cambridge University Press, 1983). See also Marija J. Norusis, *SPSS Advanced Statistics User's Guide* (Chicago: SPSS Inc., 1990), pp. 45–69.
15. Technically, substitutability and complementarity would be indicated by the signs of estimated cross-price elasticity of participation. The data do not support such determination in this case.
16. Ideally, tests of equality of coefficients would inform hypotheses pertaining to changes in behavior and/or structure over time. Such tests would not be wholly applicable in this instance because of changes in the survey instrument (e.g., "dance," more broadly defined, replacing "ballet") and variable measures (e.g., incomparability of income groupings due to inflation and category changes).
17. As has been suggested earlier, inclusion of media participation indicators as explanatory variables in the live participation equation, and vice versa, would yield information on cross-participation. Unfortunately, such inclusion also creates econometric difficulties, the correction of which requires simultaneous estimation techniques. Accordingly, what is reported in the tables that follow are the simpler results. A more technical treatment of this issue, beyond the scope of this monograph, will be forthcoming as a research note.
18. For a more complete description of the Wald statistic, see Marija J. Norusis, *SPSS Advanced Statistics User's Guide* (Chicago: SPSS Inc., 1990), p. 48.
19. For a more complete description of these tests and indicators, see Ibid., pp. 50–53.
20. See Joni Maya Cherbo and Monnie Peters, *American Participation in Opera and Musical Theater—1992,* National Endowment for the Arts Research Division Report #32.
21. The blockbuster phenomenon is discussed in James Heilbrun and Charles M. Gray, *The Economics of Art and Culture* (New York: Cambridge University Press, 1992), pp. 185–187.
22. See any standard econometrics textbook, e.g. Robert S. Pinduyck and Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts,* 3rd ed. (New York: McGraw-Hill, Inc., 1991).

23. Ibid., ch. 10, "Models of Qualitative Choice."
24. For a more complete discussion, see Marija J. Norusis, *SPSS Advanced Statistics User's Guide* (Chicago: SPSS, Inc., 1990), especially pp. 48–51.

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Other Reports on the 1992 SPPA

The following publications report on various aspects of the 1992 Survey of Public Participation in the Arts. Information regarding availability may be obtained by writing to the National Endowment for the Arts, Research Division, 1100 Pennsylvania Avenue, NW, Washington, DC, 20506.

Age Factors in Arts Participation, Richard A. Peterson and Darren E. Sherkat

American Participation in Dance, Jack Lemon/Jack Faucett Associates

American Participation in Opera and Musical Theater—1992, Joni Maya Cherbo and Monnie Peters

American Participation in Theater, Chris Shrum/AMS Planning and Research

Americans' Personal Participation in the Arts, Monnie Peters and Joni Maya Cherbo

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Carson, California

ISBN 0-929765-39-7